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**A SPECIAL REPORT:
I.S. AT THE CROSSROADS**

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HOW TO BUILD
A GLOBAL
LEADERSHIP TEAM

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ERP TO E-COMM:
"HOUSTON, WE
HAVE A PROBLEM"

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STRATEGIC
PLANNING AT
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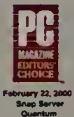
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Special Report: IS at the Crossroads

By Tom Field

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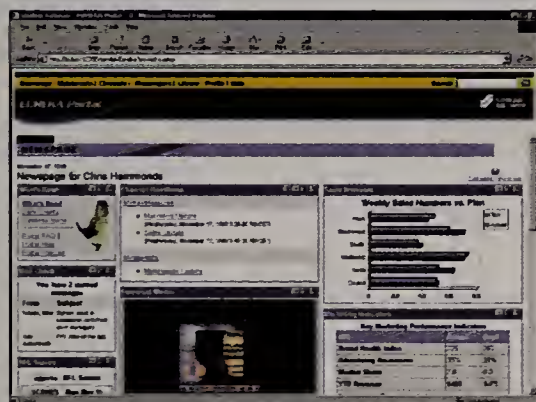
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Opinion Online

Can CIOs Be Corporate Leaders and Still Be CIOs?

SOUND OFF CIOs may be taking on more strategic tasks, but to colleagues the title still connotes a detail-oriented perspective that is antithetical to a strategic corporate mentality. Will this ever change? Read Senior Web Editor Martha Heller's column and join the debate. comment.cio.com

Gordon Jones on Online Retailing

ASK THE EXPERT From June 15 to June 30, Gordon Jones, CIO of software retailer Beyond.com will offer insight and advice on the nuts and bolts of online retailing, including infrastructure, logistics, security, locality and integration issues.

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Mark Goldstein on Kmart's Web Venture

CIO RADIO The CEO of BlueLight.com talks about doing retail online. www.cio.com/radio

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“Any significant HIATUS from MANAGEMENT will make it tough to get back in at a later date, and the longer the DIGRESSION the tougher it will be.”

—Korn/Ferry International's **Mark Polansky** responding to a reader question at CIO's Executive Career Counselor. www.cio.com/forums/executive/counselor.html

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From the Editor

lundberg@cio.com

IT Is Dead. Long Live IT!

This spring, we've been covering some extremely important trends for CIOs to stay on top of—ASPs, e-commerce and new models of IT leadership chief among them. In this issue's special report, "A Matter of Life and Death," by Senior Editor Tom Field, we pull it all together and explain what it means for the future of IS (our report begins on Page 98).

We knew when we took on this project that we were going to have to resist the temptation to be defensive. After all, our existence is pretty tightly bound up in IS. What we found is both alarming and hopeful.

The IS organization as we know it is history. But is that really such a bad thing? Would any of us argue that the way things have been going has been good for business?

What comes next is both significantly different and, I believe, substantially better. It involves more external rela-

tionships and a reliance on more external resources. Non-IS business executives will have more of a hand in technology decisions and deployment. CIOs will have less of an exclusive (and isolated) empire. One can view these trends as a threat or as an opportunity to further develop your standing

Mentors Wanted

CIO is launching a new service to match developing IT managers with experienced CIO mentors. We'll tackle such relevant topics as how to play successful politics, smart project leadership, motivating IT staff and managing user expectations. The article beginning on Page 262, "Mentors Wanted," explains the best ways to mentor and provides details on how to participate in this unique new program. If you're a veteran IT executive, why not pass on some of what you've learned?



as a full member of the executive team, integrated more deeply than ever into the business of the business. CIOs can adapt to the new reality—or experience what happens to those who won't or can't adapt.

Along those lines, this month our company launched a new publication called *Darwin*, with the tag line "Business Evolving in the Information Age." The magazine is written for your executive peers outside of IS.

Business is changing. Are you going to change with it?

Albi Lundberg

It's your anniversary.

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InBox

Reader Feedback

A STAFFING SOLUTION

I just read "Digital Security" in the March 15, 2000, issue of *CIO*. In response to your question about ideas, I was recently contacted by my alma mater (law school) calling for qualified individuals in the field to help serve as mentors for first-year law students. They also asked if people or organizations would be interested in sponsoring externship programs for some of the students, where the students could earn course credit by working in the field while gaining experience.

This approach could also work quite well in the technology field. By offering hands-on experience with technology (which in the classroom is sometimes merely theoretical or dated), students gain contacts and exposure to what they may or may not want to do. There are benefits for organizations as well. They have an opportunity to test out people before they hire them. Also, since many externships are unpaid in exchange for class credit, the only overhead is training. But if the individual decides to stay, then that's relatively low-cost training.

Craig Miwa • Sr. Software Engineer • Capsoft Development • Provo, Utah • cmiwa@capsoft.com

A SURE BET

Interesting piece on BV Solutions Group (BVSG), which recently spun off as its own consulting organization ["Spin City," *CIO*, April 1, 2000]. My money's on its success.

Contrary to the comments from Giga Information Group's Julie Gierra and Marc Cecere, the BVSG spin-off differs markedly from the group of spin-off failures and factors they point to. First, BVSG brings engineering rigor and discipline to a field where "throwing it against the wall to see if it sticks" is a cornerstone of best practices. Gierra's statement, "Those who insist on their methodology are those who are asking for trouble," is not just off-base—it's in the parking lot of a Kmart 1,000 miles from the nearest ballpark. A well-developed methodology, properly applied, is an asset of tremendous proportion and generally protected as a trade secret.

Next, BVSG's fixed-price, fixed-schedule, penalty-driven product offering combined with the self-control to turn down projects it can't deliver on is becoming increasingly appealing when contrasted with the pay-by-the-

Group and Andersen. I can only assume Cecere's comment, "A bad consulting firm could do the job badly but still claim to live up to their contract," is directed at those companies whose clients feel legal recourse is the only means of obtaining proper project satisfaction. BVSG has embedded a key quality concept (accountability) into its business model, and I believe it will serve the company well.

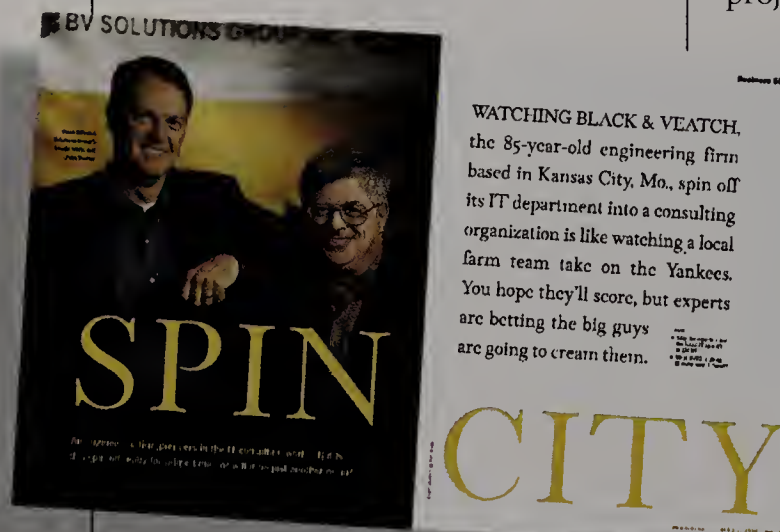
Finally, BVSG appears to understand what business it's in. BVSG CEO Gerald White's statement, "We [originally] saw ourselves as technical experts, but we're really project management experts," is indicative of the company's depth and self-awareness.

Giga's Cecere's statement comparing engineering and IT consulting is also telling of a lack of depth and understanding: "A successful engineering project means the building doesn't fall down. Also, every construction project ends in litigation. That's how it is."

If more information technology consultancies (and internal operations) applied the rigor and candor BVSG delivers, the failure rate for IT projects would be significantly smaller than it is today.

Christopher Casey
President

Casey Advisory Services
and Technologies
Concord, Mass.
casey@world.std.com



head, open-ended, we-don't-guarantee-anything approach that is characteristic of the Big Five. Compare the success of Cambridge Technology Partners (fixed-price/fixed-time methodology) with the recent spate of performance-oriented lawsuits against Cap Gemini

NOT SO HUMOROUS

I always enjoy information technology humor but was struck with a sad

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feeling after reading "They Just Keep Getting Stranger" in the April 1, 2000, Trendlines section of *CIO*. All of the humorous quotes were indicative of poor training. Maybe our laughter is from embarrassment rather than humor.

Michael A. Caldwell
Vice President, Information Systems
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mcaldwell@lasallebristol.com

MOURNING THE LOSS OF LIFESTYLE

I just finished reading "Dotcom Millionaires and Wrestling Fans" [*CIO*, April 1, 2000] and am gratified to see you place our fast-paced, technology-driven environment in a moral context. I used to wonder how the engineers and scientists who developed the atom bomb felt when they paused to consider the aftereffects of their invention.

Although today's developments and dotcom startups are not burdened with the weight of loss of life, they are responsible for the loss of lifestyle. The line that used to divide work from leisure no longer exists thanks to fax,

have seen fathers at a child's concert, recital or ball game, equipped with a handheld television so that they would not miss that all-important playoff series. Of course the truly important activity is happening right before their very eyes in the live performance of their child.

Yes, our values seem to be shifting, and technology is the engine for that change, if not the driver. I don't know about the other technology professionals, but personally I am often tempted to hide the latest gee-whiz technology rather than let it dismantle family life as we know it.

Les Mann
Director, Information Systems
SIG Combibloc
Columbus, Ohio
les.mann@combiblocusa.com

A NEW OUTLOOK

While I was researching on the Internet for potential jobs, I somehow found your article regarding nonprofit organizations ["Charity Begins at Work," *CIO*, Sept. 1, 1999].

The article brought tears to my eyes

this journey?

The past two years have been an uphill climb. The high turnover rate of board members and the inconsistencies of organization and management almost brought closure to our team last spring. This year our team has grown by leaps and bounds, more parents are becoming involved, fund-raisers are at an all-time high and we still have a swim team.

As difficult as it has been, I have made so many discoveries about myself. Organization and innovativeness have always resided in me. After reading about various individuals who have full-time jobs and still manage to volunteer and create new organizations and make that vital difference in others' lives, I have decided to continue as a board member.

Thanks to your article, I am now planning to return to school to study information technology and follow a new career.

Irene Agasid
President
South San Francisco Aquatic Club
(SSFAC)
San Francisco
eiagasid@postoffice.pacbell.net

I don't know how many times I have seen fathers at a child's concert, recital or ball game, equipped with a handheld television so that they would not miss that all-important playoff series. Of course the truly important activity is happening right before their very eyes in the live performance of their child.

e-mail and cell phones. The official workday means nothing, with the home becoming everyone's secondary workplace. Yet it is the rare employer that permits—much less offers the use of their premises—for personal activity. I don't know how many times I

because it was also the answer to my latest question. I have been pondering whether I should continue volunteering as president on our parent board for our swim team (a nonprofit organization) or whether I should step down and let another parent continue

CORRECTION

We incorrectly identified Thomas V. Fritz in "Private Industry, Public Good," in the May 1, 2000, issue of *CIO*. Fritz, who is a 33-year veteran of Ernst &

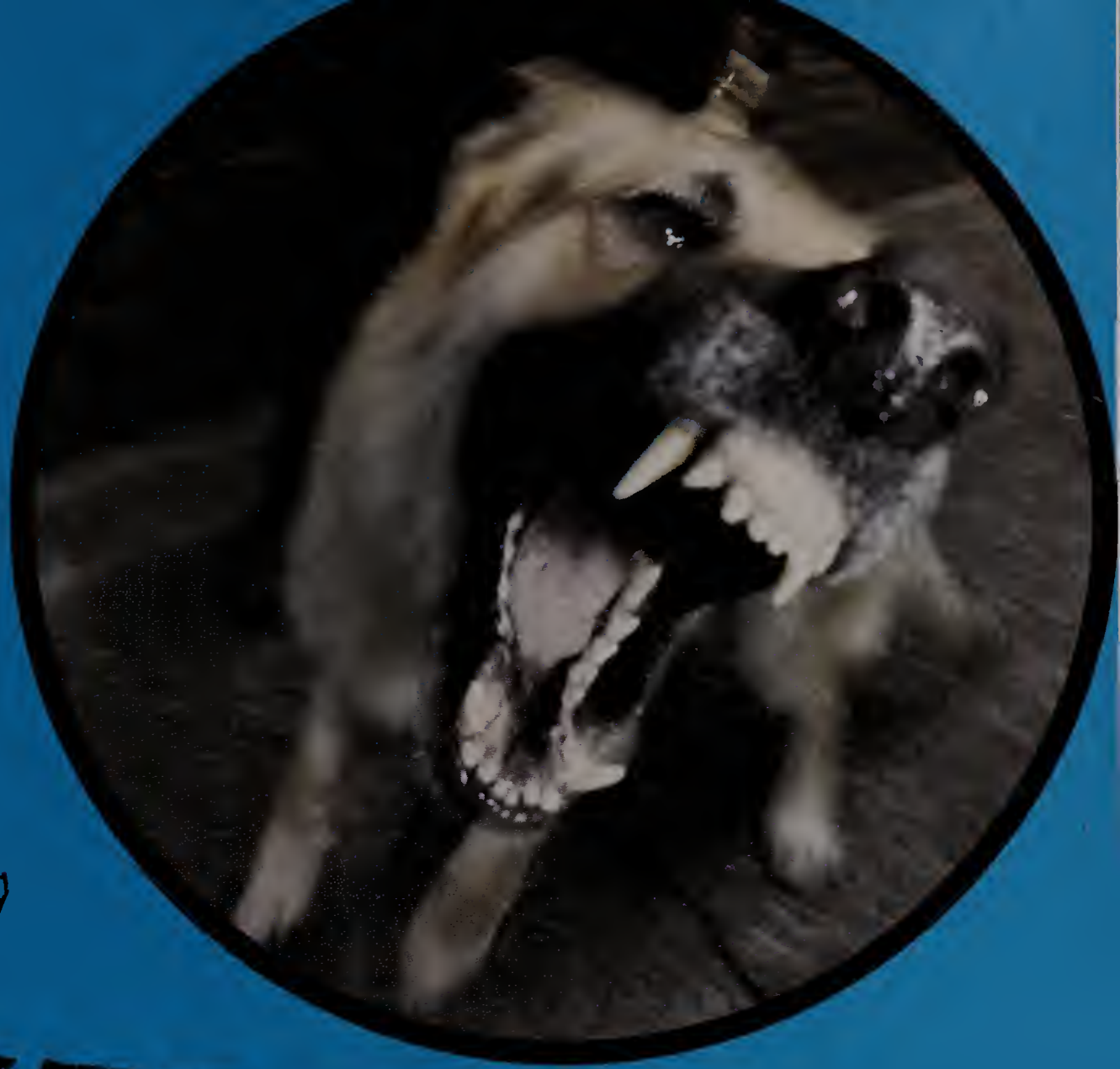


Young, is also president and CEO of the Private Sector Council, based in Washington, D.C. We apologize for the error.

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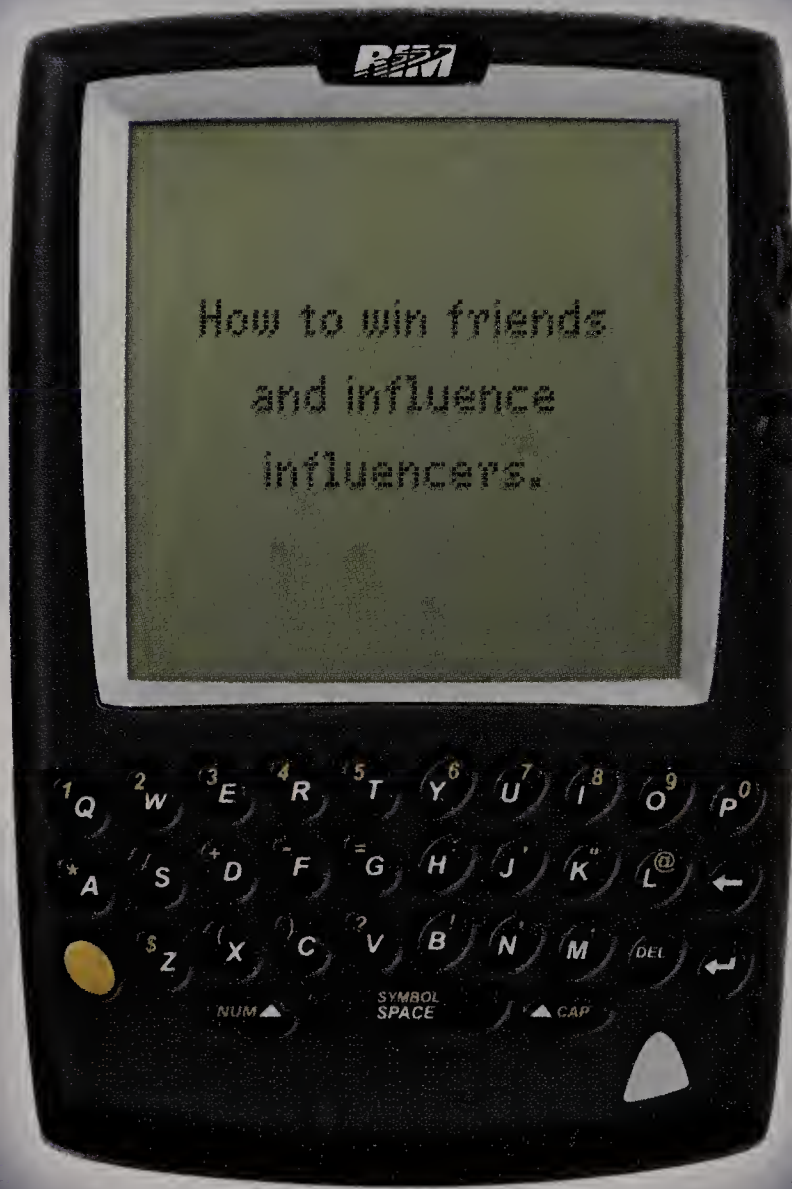


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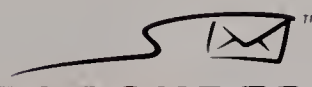
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Edited by Sandy Kendall

S Y S T E M S

Flying Blind *By Phil Scott*

SINCE THE middle of the 20th century, when someone first dragged a radar receiver to an airport control tower, pilots have been taking orders from the ground. "Controllers tell pilots where traffic is, and they tell them to speed up, slow down and to turn," says Amy Pritchett, an assistant professor in the Georgia Tech School of Industrial and Systems Engineering in Atlanta. "Typically, pilots have been unable to know exactly where and how they fit into the traffic flow."

But now, with advances in computer and communications technology, plus a U.S. government mandate to modernize the air traffic control system that dates back to an era of propeller planes carrying fewer than 100 passengers, pilots and controllers have a chance to rebuild the system from the ground up. Or rather, from the air

down. Part of the new technology that pilots will be using in cock-

pits is called Cockpit Display of Traffic Information (CDTI). It

combines input from other systems such as global positioning system (GPS) technology,

which lets each aircraft know very accurately where it is, and ADS-B (automatic dependent surveillance-broadcast), which

lets an aircraft broadcast its position and intent to other aircraft, and not just to air traffic control. CDTI can then show pilots exactly who and where other planes are, as well as their airspeed and even their intentions—a flood of the information that customarily trickled in from air traffic control. How much data is enough, and how much is too much? For Pritchett, a pilot herself, and L.J. Yankosky, a Georgia Tech graduate student in industrial and systems engineering, those are the questions.

With a grant from NASA, the duo placed 12 pilots in a cockpit simulator with CDTI that offered three different amounts of information and ran the pilots through some typical air traffic control procedures. Most of the pilots—11 of 12—strongly preferred the display with the most information, Pritchett says. "They liked having more information and getting more

involved in air traffic control." And while no one called for eliminating controllers, "pilots found they were using the information to change how they interacted with one another for the better," she says.

Continued on Page 38



Department of BIG, Scary Numbers

Gartner Group Interactive, "Where Are Java Programmers When You Need Them?" and Computer Security Institute, "2000 Computer Crime and Security Survey."

2 MILLION: number of Java developers working by 2005, making Java the second most popular programming language in the world **3 MILLION:** number of Visual-Basic developers by 2005 **\$2.2 BILLION:** size of the application building block market by 2002. **90:** percent of respondents to a Computer Security Institute survey who detected computer security breaches within the last 12 months. **75:** percent of respondents who acknowledged financial losses because of computer breaches **Sources:**



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Flying Blind

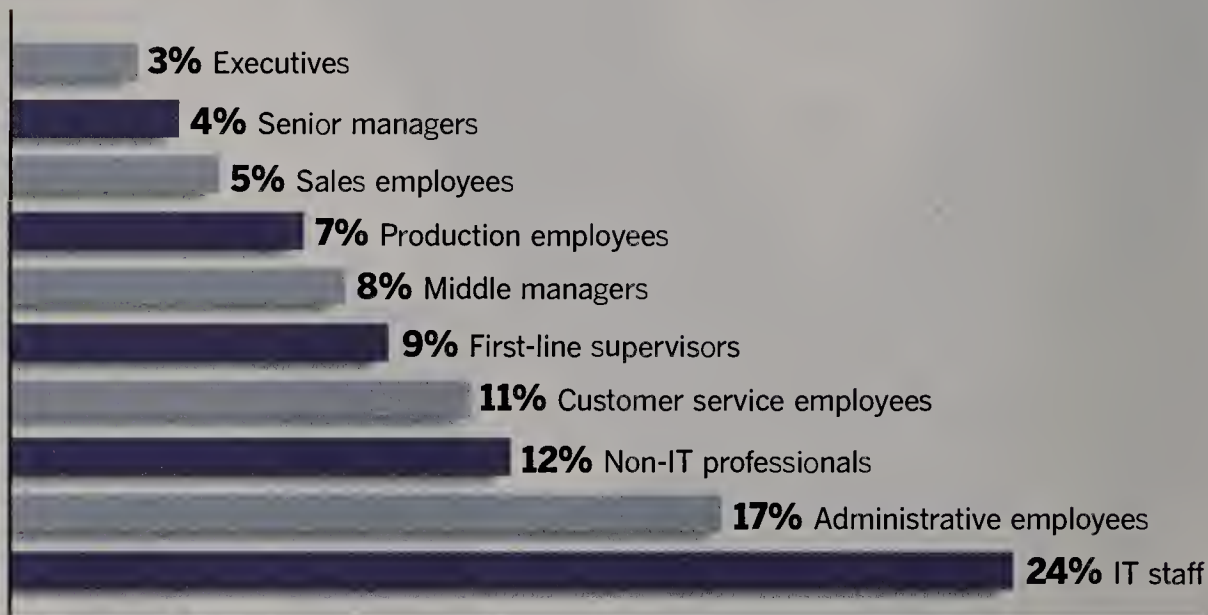
Continued from Page 36

Controllers who participated in the study felt they didn't need to talk as much and could give more precise directions. And pilots didn't second-guess the controller because they knew exactly where they should fit into the flow.

But Pritchett's study revealed another important fact: "Even having more information doesn't help if another airplane was unpredictable in its behavior." For those who believe that flight is a metaphor for life, that's not a bad lesson to learn.

Spending on IT Training

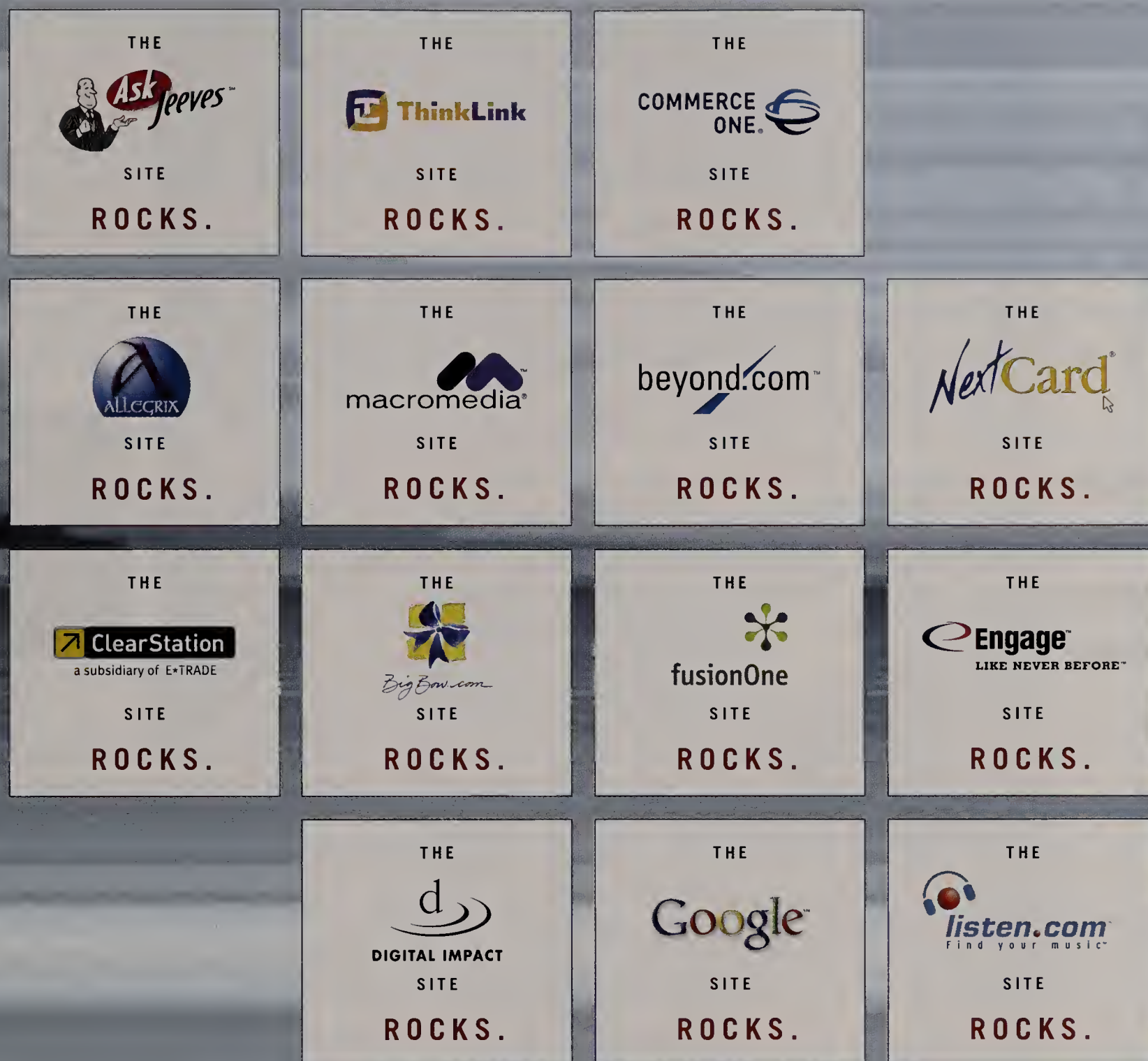
The American Society for Training & Development recently released its "State of the Industry Report" for 2000. Among other things, it surveyed 501 U.S. organizations (employing 5,000 people on average) on how spending on IT training was distributed throughout their companies.



Percentage of IT Training Expenditures by Employee Group

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Washington Watch

By Elana Varon

Digital Earthquake Insurance Debate

THE INSURANCE industry can't be expected to pay if the whole Internet shuts down, says Frank Wisner, vice chairman for external affairs with commercial insurer American International Group. So he's asking information execs to lobby taxpayers for an insurance program modeled after the Federal Deposit Insurance Corp. (FDIC) that's been guaranteeing your bank deposits ever since the Great Depression.

Wisner told more than 100 corporate auditors and CIOs gathered at a White House conference earlier this spring that the government should become "the reinsurer of last resort in case of a digital earthquake," just as it steps in to heal businesses that suffer from natural disasters. The Commerce Department's Critical Infrastructure Assurance Office—the group in charge of rallying government agencies and industries to be more vigilant about network security—agrees that a public safety net has merit. But John Triak, the CIAO director, says the private sector would have to drum up sufficient political support for the idea.

Federal insurance could protect businesses—and the economy—from huge losses from a cyberwar. Such protection could be hard to get in the private market, says Marshall Acuff, equity strategist for investment bank Salomon Smith Barney Holdings. But Acuff worries that the promise of a federal bailout would dis-

courage companies from taking proper precautions. Even a plan modeled on federal banking insurance through the FDIC might not fly because companies wouldn't want to invite the same kind of government scrutiny that banks get in exchange for protection.

"Most corporate folks would say they don't want the government in anything else," says Thomas Horton, who chairs the National Association of Corporate Directors. Horton thinks the feds would probably come to the rescue in a disaster anyway, if enough damage were done. "They bailed out Chrysler," he points out.

No New Net Taxes for Now

ON MAY 10, Congress extended the Internet sales tax moratorium from 2001 to 2006. The moratorium is the only point about Internet taxes most lawmakers agreed on after the Advisory Commission on Electronic Commerce issued a politically inconclusive report in April. Meanwhile, **Sen. Ron Wyden (D-Ore.)**, the Senate sponsor of the current moratorium, is pushing a compromise he thinks would "break the gridlock" on the issue by kicking it over to state governors.

A majority of governors want a new, uniform sales tax system that

would make it easier for businesses to remit the revenues. Most ACEC commissioners liked the idea, but not enough to make it a political certainty. Wyden would give states a few years to deliver a plan, on which Congress would get to vote. He thinks the states don't really need the approval, but they "don't want to take the political heat" for calling in Net sales taxes they can legally collect now.

Given the passion that taxes arouse, there's bound to be plenty of heat generated by both the pro- (including brick-and-mortar retailers) and anti- (opponents of taxes in general) Internet tax forces before the issue is resolved. Marla Grossman, a lobbyist representing dot-coms at Washington, D.C.-based Verner, Liipfert, Bernhard, McPherson and Hand, thinks the issue has less impact on CIOs than pending rules about online privacy or digital signatures.

Got news or views on IT issues in Washington? Send them to washington@cio.com.



Ron Wyden

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—U.S. Secretary of Commerce, William Daley

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THE WEB

It's a Nice Day for a... Wired Wedding

By Meg Mitchell

A FUNNY THING happened on the way to the altar. Somewhere between the Wedding at Cana, when Jesus changed water into wine to create the world's first open bar, and *Who Wants to Marry a Millionaire?*—about which the less said the better—nuptial bliss became synonymous with public displays that go far beyond affection.

For better or worse, the Internet, with its indulgence of voyeurism, offers plenty of tools to serve both the need for resources and for attention of brides and grooms to be. The granddaddy of them all is Theknot.com, the website of The Knot Inc. based in New York City, on which one can plan an entire wedding without leaving the desktop: find a photographer, find a dress, find the answers to wedding day etiquette (What *do* you do when Aunt Sylvia has one too many?). Two other major sites are WeddingChannel.com and UltimateWedding.com.

The attraction of these sites lies far beyond their usefulness. It takes the average person approximately three-and-a-half minutes to find out all they want to know about someone else's wedding. Unless, of course, the average person is planning a wedding of their own, in which case they'll feign interest in someone else long enough to buy a few minutes to chatter on about their own plans.

At Theknot.com, more than 2,000 people become members each day. That's a lot of wedding talk. Visitors can not only browse acres of tips on food, makeup and finding

the perfect honeymoon spot, but they can look at the pages of other couples and join live chats about urgent matters like whether a tiara works with short hair. "People find there is an audience for their complete self-involvement," says Carley Roney, one of The Knot's cofounders. At WeddingChannel.com, visitors can browse a library of stories on how couples became engaged. And at UltimateWedding.com, check out how fea-

tured couples are planning their day (mostly so that you can make sure you're planning something better).

If it's true that a wedding represents the average person's chance to be famous for a day, these sites allow people to stretch that day into months and months. But the Internet will be a true success when it offers a way to download the money to pay for it.



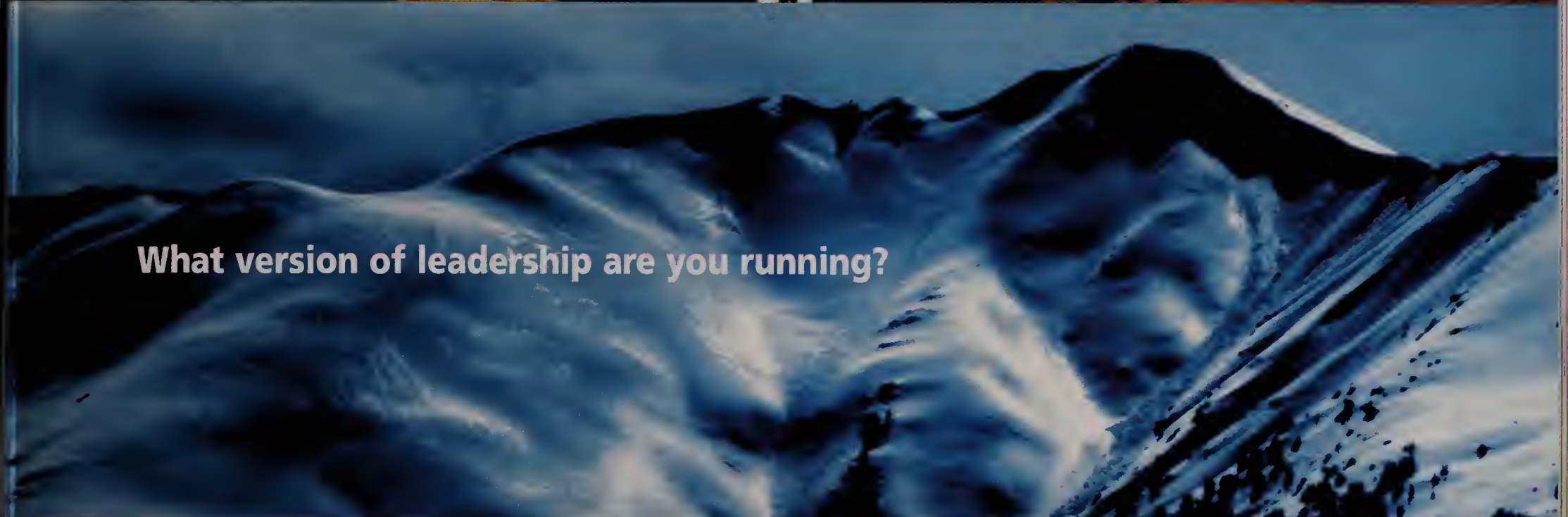
“THERE IS MORE TO LIFE THAN INCREASING ITS SPEED.”

—Mahatma Gandhi

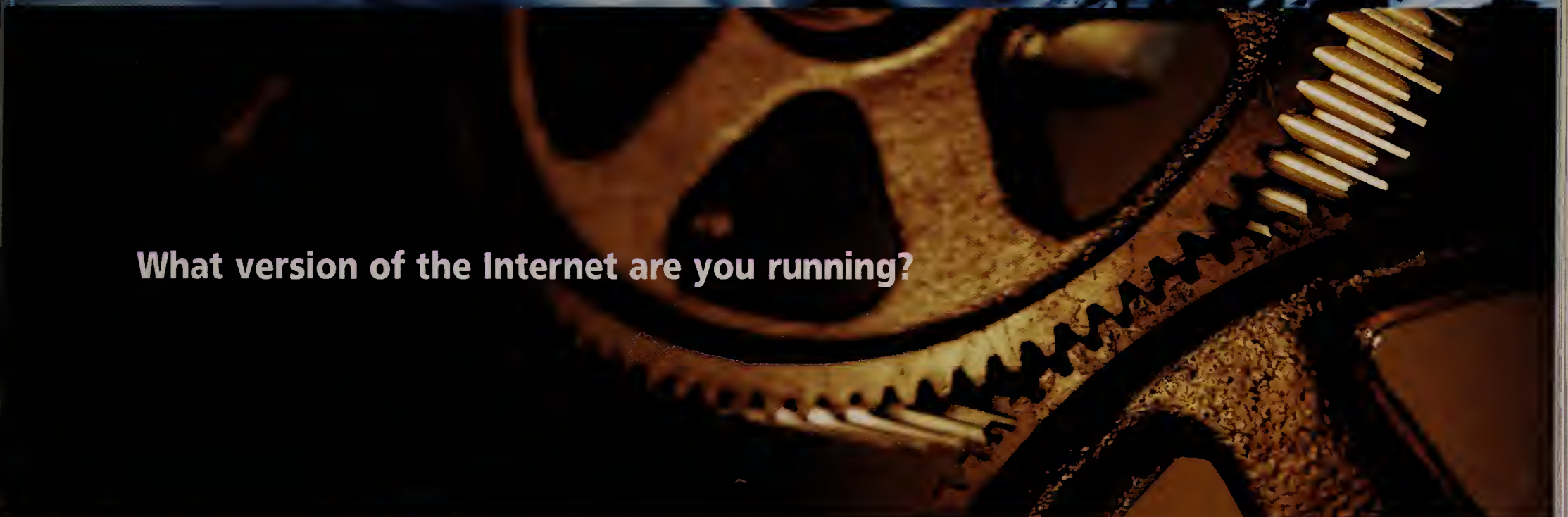
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LEGAL MATTERS

For Pitt's Sake

AMERICAN ACTOR Brad Pitt is suing. And it's a fine show of how the far corners of the electronic world can slam together like a collapsing star. Pitt alleges that a resident of Dubai, United Arab Emirates, plus several others, have infringed on his name by registering a website called Bradpitt.com, which is housed on a server in Kincaid, Ill. That, however, is not to be confused with the website Bradpitt.net, registered in Finland but recently relinquished to Pitt. Got that? That site sold Pitt paraphernalia without Pitt consent. But Bradpitt.com simply contains the announcement: "This domain name is for sale," along with contact information for those soliciting offers. So where is the jurisdiction in this melting pot of cybersquatting?



According to precedent, personal jurisdiction holds in the place where the harm is done, even if the defendant made his keystrokes across the globe, and here that is California, where Pitt resides. At press time there had been a demand for mandatory arbitration through ICANN as an alternative to civil litigation to force the transfer of the domain.

HOT TOPIC



LEADERSHIP

The Glass Half Full

By Polly Schneider

People who see the world through rose-colored glasses are often chided for being naive and out of touch with reality. Yet Pollyannas have a lot to teach

the world of business—at least that's what recent research from the Center for Creative Leadership in Greenville, N.C., suggests.

By analyzing the Center's database of psychological data from surveys of more than 10,000 managers since 1988, Senior Fellow David Campbell discovered one common leadership trait: optimism. "We have a standardized survey, and if you [administer] it in a typical organization and calculate it by rank, you always find that people in the higher ranks find more satisfaction and motivation on the job," he explains. And despite the pressures of being at the top, Campbell's research shows that people get happier the higher they rise in their careers.

Thinking positively is not only good for your personal career development, but it also drives leaders to perform and score wins for their organization. Says Campbell, "Optimism produces persistence and encourages people to continue in the face of setbacks."

So which comes first? Are people at the top optimistic because they are at the top, or does optimism propel people to reach the top? A little of both, probably. Research from leading behavioral experts in academe points to the latter, Campbell says. One such expert, Albert Bandura, a professor at Stanford University, describes optimistic leaders as those with "self-efficacy," the capability to perform *and* the self-confidence that they can perform well. "It's sort of like the Weight Watcher's philosophy. Everyone in America knows how to lose weight, but whether or not you believe you have the self-discipline to do it is what matters," Campbell explains. People who have achieved success in the past believe they can do it again—and that's why senior execs are more optimistic than their underlings.

Is negativity in your blood? It is possible to learn optimism, but it requires a lot of self-talk. If you suffer a loss, ask yourself the following: Is it permanent, pervasive in my life, and am I responsible? Campbell says optimists tend to answer no to these questions while pessimists would say yes to all three and get depressed. His advice to those wanting to improve their outlook on life and climb the ladder at the same time is simple: Choose a small, nonthreatening task to prove yourself. Take on a volunteer project in the community, or offer to plan your company's annual picnic. There's always tomorrow, after all.

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Read 'Em and Reap

THEY DON'T make good beach reading. In fact, many of them end up awaiting the dumpster in unread stacks. The annual report, that glossy brochure filled with financial data that publicly traded companies are required to publish, rates up there with white papers and the Yellow Pages when it comes to dull reading material.

Enter the Report Gallery, which runs a jazzy website promising the impossible: to make financial disclosure fun. That may be a stretch. But the two founders, Thomas Amon and David Roach, have been preaching the benefits of publishing financial information online for more than five years. By scrapping the traditional annual report, the two Orange County, Calif., entrepreneurs argue, companies save printing and delivery costs—not to mention some trees. The company charges an average of \$2,500 for its services.

The lively website (www.reportgallery.com) now contains more than 2,200 annual reports from some of the world's big corporations, including Boeing, Disney and McDonald's. The colorful design draws investors into the site, where they can compare financial information from most of the Fortune 500, read about international companies in English and search links to other financial service sites.

And Cornerstone Investor Relations, the Report Gallery's Santa Ana, Calif., parent company, doesn't want to stop at annual reports. Soon, they say, companies will be able to create virtual walk-throughs of corporate headquarters and new plants in foreign lands, as well as live video of CEOs delivering messages to shareholders.

—Susannah Patton

T R A I N I N G

Hire Me, Pretty Please

By Sarah D. Scalet

VENERATED RUMOR has it that MIT students are socially inept. But if they are, could 165 of them have earned degrees this year—for being charming? Forget about technological innovation and scientific brilliance. Charm School was an afternoon of technique, with wannabe smooth-talkers focusing on topics such as the art of the schmooze, elevator etiquette, wine, small plate balancing, mobile phone manners, earnest gazing and other listening skills and a game titled *Who Wants to Be a Charminaire?*, spoofing the popular TV show, with prizes including deodorant and toothpaste.

"We try to be a little timely," says Charm School Coordinator and Assistant Dean for Student Life Programs Katie O'Dair, emphasizing that the annual event is an irreverent way of tackling serious subjects—not a makeover day for nerds. "Anyone visiting campus today will see that's not what MIT students are really about. This is clearly about life skills."

The school opened its well-mannered doors eight years ago, O'Dair says, based on a faculty member's observation that some students were not learning certain skills they would need in the business world. Since then, Charm School has become an anticipated part of MIT's month-long Independent Activities Period, a period between semesters when students choose short courses from a selection of nontraditional subjects.

Most of Charm School's 30 miniclasses are taught at booths assembled in a well-trod area of campus. For each 15- to 30-minute class completed, a student gets a certificate; six classes earn him or her a "bachelor's degree" in charm, eight yields a master's and twelve a PhD. This year, of the 800 students

who dropped in and the 165 who gathered enough charm credits to earn degrees, about 100 earned charm PhDs. "People who committed to Charm School did it all the way," says O'Dair.

With the kinds of positions MIT grads will take in an increasingly technical business world, it wouldn't behoove us to say anything rude. But we do have to wonder, if students are so pocket-protector-free, why the library staff felt moved to contribute a charm school section on "What happens if you drool on your book." Let's hope for an incomplete in that one.

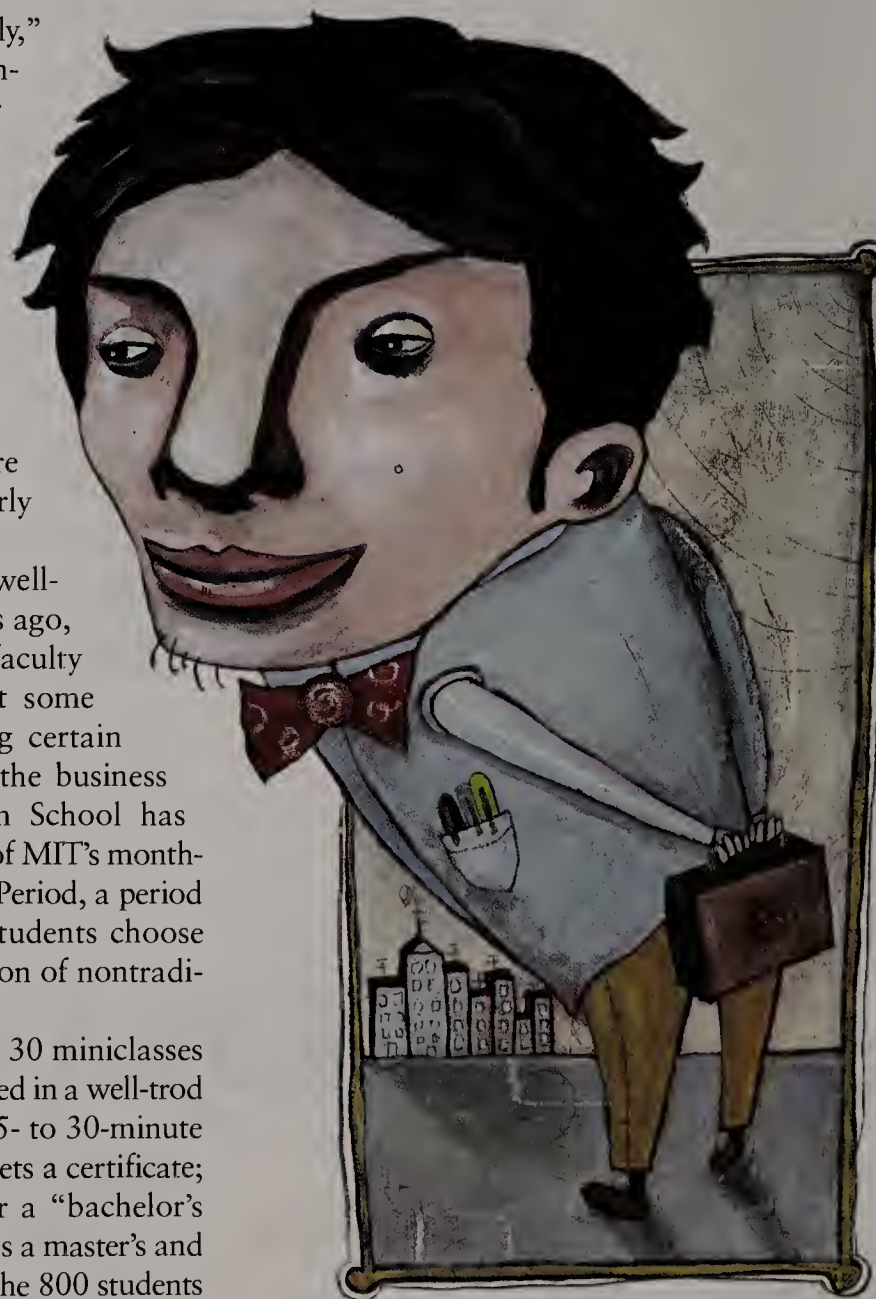


ILLUSTRATION BY MICHAEL MILLER

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Off the Shelf

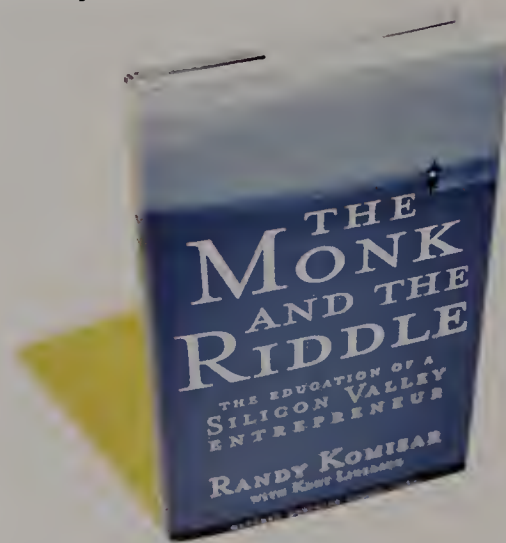
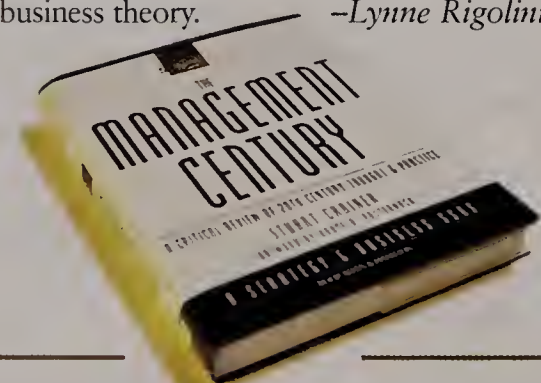
Edited by Carol Zarrow

A History Lesson

The Management Century: A Critical Review of 20th Century Thought & Practice
By Stuart Crainer

Jossey-Bass Publishers, 2000, \$28
In *The Management Century*, Stuart Crainer methodically moves the reader decade by decade through U.S. political and economic events since 1900, discussing their impact on business philosophy. Each chapter focuses on the few men (and fewer women) who helped develop American management theories and practices—corporate tycoons, scientists, engineers, academicians, writers and psychologists. Some of their mantras for success still apply today. Peter Drucker's assertion, for example, that the one valid purpose of business is to create a customer is as challenging now as it was in the mid-1950s. But Crainer also examines some once-accepted ways of thinking that ended up discredited. A concluding chapter summarizes the current state of management theory in a series of topics that reflect today's uncertainty, for example, "Living and Dying by Ideas," "In Search of Values" and "Corporate Mortality." So if there's no time to get that MBA anytime soon, you can use this book to learn who's who and what's what in the world of business theory.

—Lynne Rigolini



Also...

The Monk and the Riddle: The Education of a Silicon Valley Entrepreneur

By Randy Komisar

Harvard Business School Press, 2000, \$22.50

Komisar presents a fascinating carpe diem tale, part seminar and part philosophy, that incorporates business development advice and his own educational experiences as a central figure in the history of Claris Corp., LucasArts Entertainment, WebTV and GO Corp. Along the way, he teaches a budding entrepreneur how to stop deferring his life's ambition and relish a gamble.

—Stewart Deck

CIO Best-Seller List

5.

The Cluetrain Manifesto: The End of Business as Usual

Christopher Locke, Rick Levine, Doc Searls, and David Weinberger
Perseus Books, 2000

4.

First, Break All the Rules: What the World's Greatest Managers Do Differently

Marcus Buckingham and Curt Coffman
Simon & Schuster, 1999

3.

Blown to Bits: How the New Economics of Information Transforms Strategy

Philip Evans and Thomas S. Wurster
Harvard Business School Press, 1999

2.

Clicks and Mortar: Passion Driven Growth in an Internet Driven World

David S. Pottruck and Terry Pearce
Jossey-Bass Publishers, 2000

1.

Who Moved My Cheese?: An Amazing Way to Deal with Change in Your Work and in Your Life

Spencer Johnson
The Putnam Publishing Group, 1998

SOURCE: Date from week of April 30, 2000, compiled by Amazon.com.

TELL US what you're reading and why at books@cio.com. Visit the Reading Room at www.cio.com/books.

What They're Reading

Ed Glotzbach, executive vice president and CIO, SBC Communications, San Antonio

The Whole Systems Approach: Involving Everyone in the Company to Transform and Run Your Business, by W.A. Adams and Cindy Adams (Executive Excellence Publishing, 1999)

"Chapter 6, on diagnosing organizational health, has been helpful in instructing me about the proper focus for a large organization. Very good book." *The Power of Simplicity: A Management Guide to Cutting Through the Nonsense and Doing Things Right*, by Jack Trout (McGraw-Hill, 1998) "An excellent work on the need to simplify in order to be effective...one of those books that I refer to often and reread certain passages."

Lucent

Qualcomm

Sony

DoubleClick

UUNET

IBM

Chase Manhattan Bank

Citibank

Motorola

3M Corporation

FedEx

Internet Shopping Network

ebay

Infoseek

Johnson & Johnson

Grubb & Ellis

Standard & Poor's

E*TRADE

AT&T

Siebel Systems

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Lehman Brothers

Bank of America

Toyota

MetLife

Digital
Insight

BMW

GeoCities

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BankBoston

Intel

Fogdog Sports

Blue Cross Blue Shield

Sun Microsystems

TIME MANAGEMENT

5 Lessons from Amazon.com's Jeff Bezos

1 Set aside Tuesdays and Thursdays as your own, without any regularly scheduled meetings.

2 Break your routines. Visit stores. Scrutinize your own website. Learn from unexpected places.

3 Work fast and fix small mistakes later. The only fatal error on the Web is being too slow.

4 Use e-mail aggressively to learn what customers think. They won't always be polite, but they will be candid.

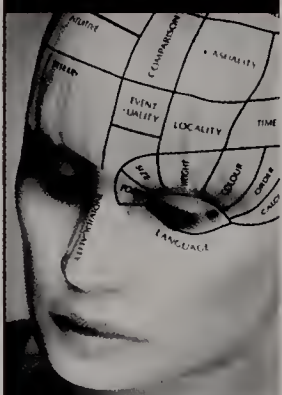
5 Make time for thanks. That's never the most urgent task, but in the long run it can be very important.

FROM AN INTERVIEW WITH JEFF BEZOS
IN THE WALL STREET JOURNAL, FEB. 4,
2000

"There is no corporate structure that is solid in this environment. We are always subject to being purchased, reengineered or reorganized."

—Steve Bing, author, *Perspectives*
Speaking at the Conference, 2000.

HOT TOPIC



KNOWLEDGE MANAGEMENT

You Knew It All Along

By Carol Hildebrand

How many times have we said it? KM is not a pure technology play—it involves people too. (OK, we don't have the exact

number, but trust us, it's a lot.) Now KPMG Consulting has come along to put a nice, solid foundation under all our insistent soapbox rhetoric. The consultancy recently published "Knowledge Management Research Report 2000," a survey of 423 organizations across the United Kingdom, mainland Europe and the United States. (Each of the companies reported at least \$300 million in revenues and represented a wide variety of industries.)

The study found that more than two-thirds of respondents have set up

knowledge management programs and have high expectations of them: 79 percent felt that KM could play an "extremely" or "very significant" role in improving competitive advantage. But while these organizations have succeeded in implementing KM technology, such as collaborative computing or databases of internal experts, the investments could be wasted because companies so often ignore the human factor.

A significant number of companies are experiencing problems with employee use of KM systems, according to the study. For example:

- 67 percent claim to suffer from information overload
- 67 percent say that employees want to share knowledge but don't have the time

■ 62 percent say that employees are not using the available technology to share knowledge effectively

Less than one-third of the respondents have implemented incentives that reward knowledge sharing.

Says David Parlby, a partner at KPMG Consulting in London, "In reality, the problem is that many systems were designed without due consideration to employee needs. Without employee-friendly programs, companies risk wasting the considerable resources they've invested, and are unlikely to realize the full bottom-line benefits."

Excuse us, please. We have to go write 10 times on the blackboard, "It's rude to say I told you so."

The full report is available at the KPMG website at www.kpmgconsulting.com.

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Your data network is only as secure as your telephone network.

Introducing the TeleWall™ security solution, the first telephone firewall system that works alongside the data network security system to fully protect your enterprise. The simple act of connecting a modem provides a direct “back door” link between the public phone system and your data network. The TeleWall solution allows you to shut down rogue modems, block would-be intruders and police unauthorized traffic via centralized management of a fully distributed sensor system. And with enterprise-wide visibility, you get real-time data on the use of your telephone system, and analytical data to calculate financial return-on-investment.

So unless you have an “open door” policy for your data network, it's time you hatched a new plan for enterprise security.

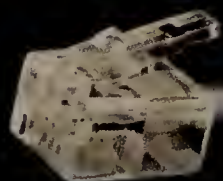
Go to www.securelogix.com/egg

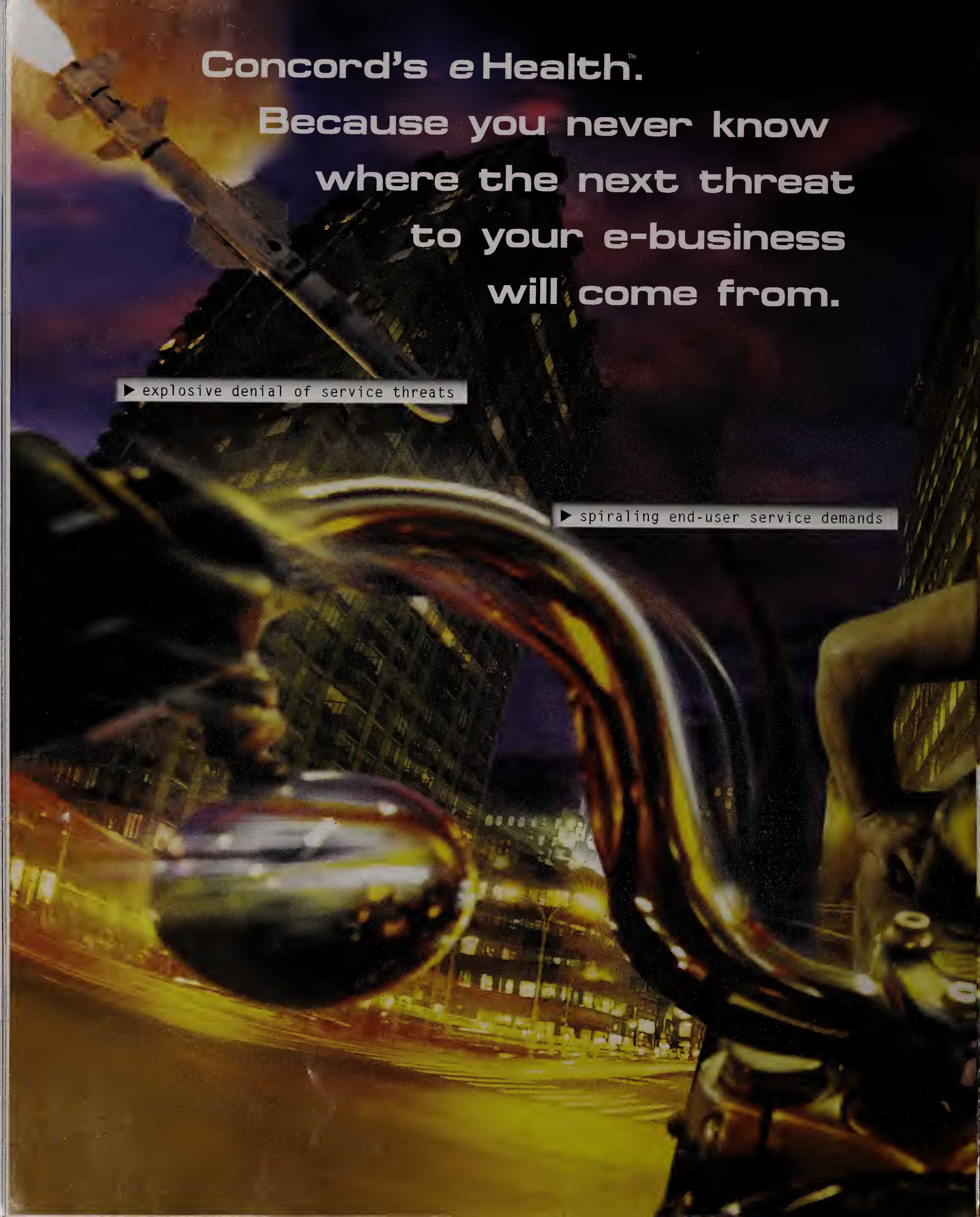


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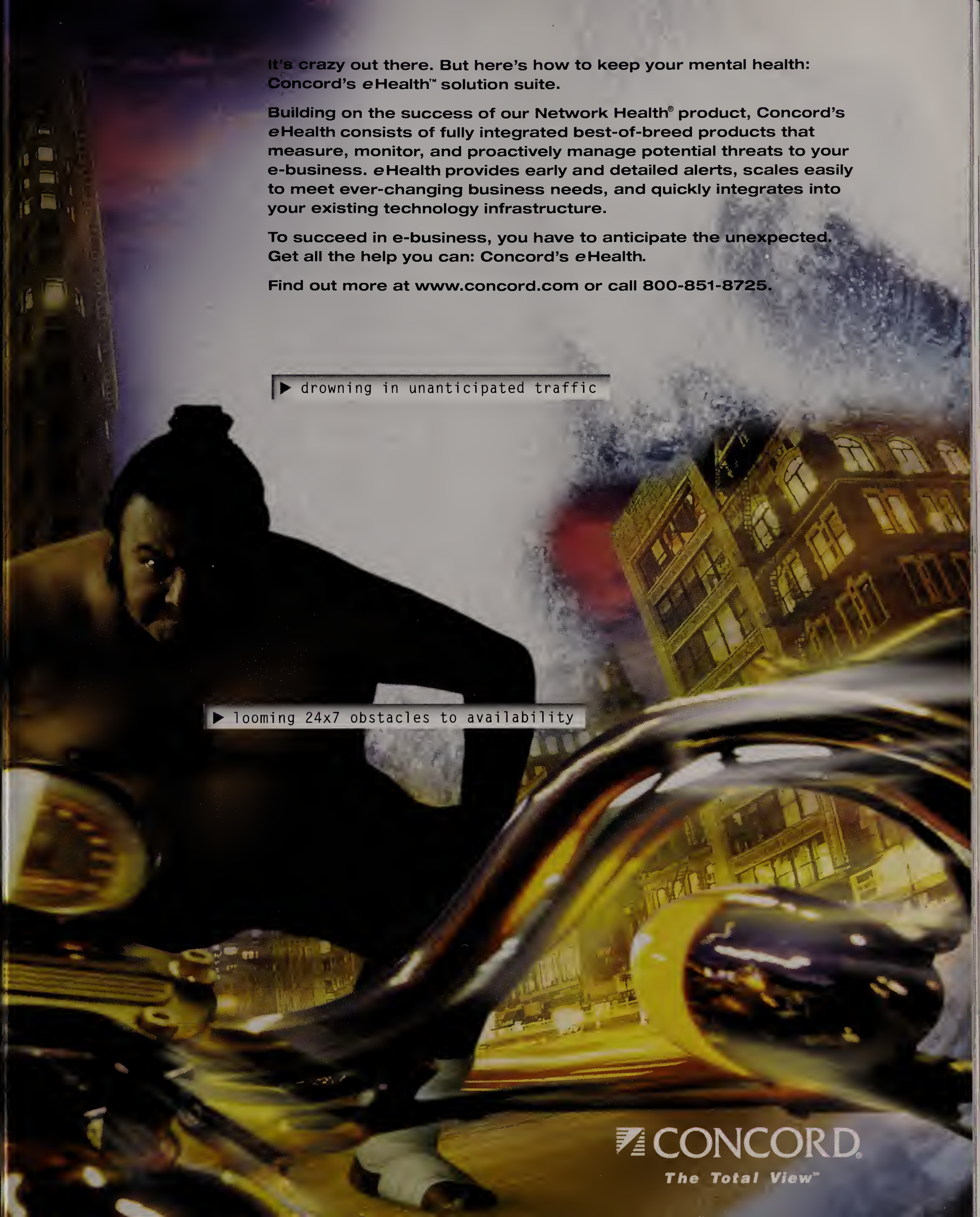


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**Because you never know
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A man in a dark suit is seen from the chest up, looking out of a car window. The background is a blurred city street at night, with lights from buildings and cars visible. The scene is framed by the car's interior and the window.

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Career Counsel

Mark Polansky Offers Advice to Aspiring CIOs and IT Managers

Human Capital Concerns

Q: I have always maintained that the most important aspect of IT is the people. The technology is just a tool by which management furthers the interests of the business and enhances shareholder value based on knowledge gained from the data that they are able to turn into useful information. If we are to believe what we read about a shortage of individuals with IT skills, it appears that one of the most vexing problems that CIOs and their staff are having is the ability to recruit and retain people. Add to this the push for developing some level of diversity (other than H-1B candidates) throughout the enterprise. What advice would you give to CIOs who are looking to increase the level of diversity within their organizations? And is diversity something that CIOs are concerned about?

A: You are absolutely right when you refer to human capital as the most important asset of any enterprise. In IT, the boxes and the pipes are certainly critical. But the people behind the IT vision, the strategy, the design, the deployment and the support of the technology are what's really important. The right people can make the difference between business success and

failure, between good and bad company operating performance and between market leadership and mediocrity. Most good CIOs and other business leaders know that their No. 1 job is acquiring, developing and holding on to good people. This mission-critical responsibility, exacerbated by a shortage of professional IT personnel estimated at between 300,000 and 400,000 and still growing, usually overshadows the diversity issue. That is to say, given the shortage of talent, CIOs and their management team will pursue all qualified candidates regardless of any diversity issues. Those companies and those CIOs that are tuned in to the value of diversity, and proactively seek out diversity candidates, can be rewarded by the contribution such candidates can make. There are several professional organizations and societies such as the Black Data Processing Associates (www.bdpa.org) that can help.

This situation, however, is not without hope. A recent study



ILLUSTRATION BY R. GREGORY CHRISTIE

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of the highest paid, most successful minority executives in corporate America, sponsored by Korn/Ferry International and the Columbia Business School, reveals what it takes for these top-level managers to move up the corporate ladder and the strategies they use to overcome discrimination in the workplace. One of the survey's most significant findings is the importance that role models and mentors play in determining chances for success. Forty-eight percent of respondents say they had a role model who helped guide them toward early career goals. In their pro-

The big difference here, and the precedent that will be established, is that most executive MBA programs take you away from your day-to-day activities and limit your availability—perhaps every other Friday, weekends or a couple of weeks during the summer, plus the expense of the travel to and from. Therefore, I think your biggest challenge is to convince management that you can juggle your schedule, continuing your commitment to your workload while getting their money's worth for the time and dollar investment they will make in you.

Alternatively, pursuing an executive MBA via distance learning, in which the classroom comes to you, may alleviate some of the lost time and travel cost concerns of your employer. Any good search engine or educational portal should help you find the better ones.

And yes, we do occasionally see tuition payback clauses in benefits policies that might typically say that you must reimburse the company if you leave within one year of receiving the benefit.

Lastly, it would be dangerous to assume that your company's reluctance to sponsor your executive MBA is a vote of "no confidence" in you and take it personally. They may not be willing to spend the money or set the precedent regardless of who asked for it. Nevertheless, I would rethink the company—and its policies—as a long-term employer in light of their refusal.

THE NEXT BEST THING

Q: I have landed that next good opportunity, though it is not in my desired geography—Utah is a long way from Florida, where I wish to be. However, I know that there probably will be another job change in my future. My question, then, is what is the best way to announce my taking this new position to my network of professional contacts and the retained recruiters that worked with me? I want to let everyone know where to find me and handle that sensitive issue of wanting to hear about appropriate opportunities in my home state near my aging parents.

A: The first part of your question is pretty simple. Draft an upbeat thank-you letter to your network of friends, colleagues and recruiters you contacted during your job search, whether they were helpful or not. Express your appreciation for all their encouragement, advice and assistance, and also let them know about your new role and your new contact information. This is a classy way to bring closure to the process and allows everyone to update their contact manager or database.

The second half of your question is both difficult and disturbing. I will assume that you were previously employed and that you compromised your geographic objective in favor of

To tell the world that you have taken a new job but that you still want to hear about opportunities somewhere else is to declare yourself to be fickle, untrustworthy and perhaps a few less polite adjectives as well.

fessional careers, formal and informal mentoring is seen as a key to the development of minority executives. In fact, finding a committed mentor was listed as a crucial turning point in many of these executives' careers. Seventy-one percent of those surveyed say they have informal mentors and 22 percent have formal mentors, usually white males in both cases. Copies of the study are available by request to mark.polansky@kornferry.com.

EXECUTIVE MBAS

Q: I'm a manager of a world-class Web development team seeking an opportunity to excel in a global company of 4,000 employees and \$1 billion in revenue. As I hone my leadership and technical skills, one thing I strive to improve on are my financial and global management skills. I'm confident that a structured approach in these areas through an executive MBA program will round out my background in becoming a future CIO or senior executive. As I formulate a convincing argument for my company to fund and sponsor participation in a program at a top-tier university, I'd like to know what your thoughts are.

A: An executive MBA should routinely qualify for consideration under the "tuition refund" benefit program of larger corporations and many smaller companies as well. I don't think that you can quantify the benefit of such a program (or any other education, for that matter), but a qualification of the investment—through your increased knowledge, abilities and value to the company—should be fairly easy and straightforward in an enlightened environment.

Who's On The Bench?

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"PSA software users can expect a 3–8% increase in productivity."

– The Aberdeen Group

The Final Score

	Productivity increase	Utilization increase	Additional revenue
Home Team	3%	30 people	\$12M
Competition	0	0	\$0

Based on 1000-person staff, billable 200 days/year @ \$2000/day.

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Career Counsel

the “good opportunity” in Utah, and therefore you simply must be prepared to spend at least a year or two at your new position unless it turns out to be a mistake. To tell the world (other than your very closest friends) that you have taken a new job but that you still want to hear about opportunities somewhere else is to declare yourself to be fickle, untrustworthy and perhaps a few less polite adjectives as well. The good recruiters will remember your desire for Florida or have captured that information. Some will discount you for having taken the Utah position, and others will call you again sooner or later. Otherwise, look forward to a future opportunity to recontact your network and alert them to your availability for a change based on geographic preference. And stick to it next time.

CERTIFICATIONS: WORTH THE EFFORT?

Q: I have more than 15 years' experience in IT, starting as a programmer and working my way through various industries to a regional IT director position. I've decided to strike out on my own as an independent, and I really love working with the new and popular technology. To update my knowledge and to gain further credibility, how desirable are the current certifications offered by the major software and networking companies, and do prospective clients consider these certifications valuable when selecting a consultant or contractor?

Have a career question?

Visit our website at www.cio.com/forums/executive/counselor.html and pose your own questions to Mark Polansky.

A: Certifications are always welcomed on a résumé as an indication of having received proper training in a particular technology or skill, and perhaps as a reflection of you as a focused, determined and conscientious professional. Certifications usually demonstrate a positive attitude toward putting forth the time and effort for self-improvement—toward one's career in general and the desire to excel and get ahead. And certifications can be an extremely significant differentiator among those who lack on-the-job experience but have the relevant training, and can often help you get a foot in the door.

Certifications won't substitute for hands-on experience in landing a position that requires know-how, but certifications will enhance the value of those who have them. As I have said in this column on several occasions, take advantage of any potentially meaningful opportunities for education, be they degree courses, certificate programs or seminars. Just be wary of the

commercial training hucksters that unfortunately seem to follow closely behind the hot skills of the day and the job market.

AM I EXPERIENCED?

Q: Since graduating from college with an MBA in finance and marketing, I have spent the last 12 years rising rapidly through the ranks of IT including eight-and-a-half years in a Fortune 500 company and the last three years as an IT director (formal position of CIO does not exist) for a midsize company. While the IT assignments and experiences have been exceptional in both companies, I have not been given formal opportunities for executive leadership outside of IT. I attribute much of this to working for companies in industries that have not traditionally looked to IT to cultivate top executive talent and are not known to be on the leading edge in many respects.

I have a goal of leading a company and have expressed this to my employer. My work experience and educational background would seem to uniquely position me to lead an Internet-centric company. Your advice?

A: My sense is that you are getting ahead of yourself, and that there are some important dots that you have not yet connected. First, I hear you, with respect to your IT management experience, but you didn't mention any experience on the operating or administrative side of your employer's business. If your objective is to lead a company, then transfer out of IT into an operating department and learn the business internally, from the ground up. A series of low to midlevel management positions in producing, marketing, selling, distributing, servicing, administering and supporting your employer's goods and services—coupled with your already developed leadership skills—should prepare you for your goal in time.

As for running an Internet company, your IT experience may very well make you an attractive candidate for a CTO position—planning and building the venture's technical base of operations, especially if you have the appropriate technical knowledge. Again, general management may be too big a jump just yet. Today's young, entrepreneurial dotcom CEOs are usually the creators of an idea. They get the idea in motion, and then move aside in favor of professional management who can effectively build and manage an enterprise, raise capital and create wealth for its investors and employees. **CIO**

Mark Polansky is a managing director and member of the advanced technology practice of Korn/Ferry International in New York City. He is also chairman of the Greater New York Chapter of the Society for Information Management. The Web-based Executive Career Counselor column is edited by Web Research Editor Kathleen Kotwica. She can be reached at kkotwica@cio.com.



PHOTO BY ANDRE SOUROUJON



**Think of your current sales channels as the cake.
Think of NetVendor e-Channel solutions as the icing.
Who wants dessert?**

Layer your traditional sales channels with e-Channels and expand your global opportunities via the Internet. NetVendor's e-Channel solutions let clients use the Internet to effectively manage complex product distribution channels. Through NetVendor's e-Channel solutions, you can enhance your existing sales, marketing, service, and distribution activities with a variety of new and important Web-based e-Channels. The net benefit: unprecedented capabilities for reaching and serving trading partners through a collaborative B2B e-commerce platform.

Getting started is a piece of cake. Just visit our Web site to learn more about our unique recipes for e-Channel solutions.



CONTENT SECURITY. THE GOOD, THE BAD, AND THE UGLY.

"Businesses lost \$7.6 billion in enterprise system attacks the first six months of last year alone."¹ (Without counting, hundreds of millions in lost productivity.)

Your enterprise has to be connected on a global scale to compete in today's business environment. Every day there are headlines warning about your vulnerability to internal or external attacks.

Content Security is forcing corporations to examine privacy, confidentiality, and safety issues to their very core. Today's unregulated online territory exposes enterprises to disastrous, malicious possibilities that threaten your ability to conduct business and potentially could shut your organization down.

But don't panic.

By implementing a strategic policy to assess and manage your security risks, you can successfully protect your networks from attacks,

exposure to liability, security leaks, and even revitalize employee productivity.

DID YOU HEAR THE E-MAIL JOKE ABOUT THE GUY WHO COST THE COMPANY MILLIONS?

The one about the tasteless joke some clown thought was funny. It wound up in an e-mail box that resulted in a \$2.2 million sexual harassment lawsuit.

The fact is, last year the Supreme Court ruled

companies are liable and responsible for inappropriate e-mail communications between employees, regardless of whether or not the company was aware of the communication.

And improper use of e-mail privileges not only leaves you vulnerable to lawsuits, it exposes you to loss of confidential, proprietary information. For example, employees who inadvertently send sensitive corporate



trade secrets and strategic documents like salaries or financial plans.

By scanning e-mail usage, you can monitor suspicious content and reduce e-mail volume, thereby boosting bandwidth.

SOME TEENAGERS HAVE AN EASIER TIME WRITING MALICIOUS CODE THAN GETTING DATES.

Some can be mischief-making 15-year-olds writing

malicious code. On the other hand, there are real ugly enemies out there.

Rogue employees and virtual terrorists bent on stealing company secrets, spreading malicious viruses, crashing servers, and potentially causing economic chaos.

If someone hates you, without intrusion detection they can electronically paralyze your site,

the streaming videos of sports highlights.

Perhaps a good employee, but an unwitting threat to your organization. For as he's accessing inappropriate sites, he's also unintentionally exposing the enterprise to malicious code, software incompatibilities, and potential liabilities.

This misuse of Internet privileges has significant real costs. It drains bandwidth and company resources.

In just one month, non-work hours spent on the Internet can cost a corporation hundreds of thousands of dollars in lost productivity.

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We provide a multi-tier protection program that begins with risk assessment, a program that helps you monitor and manage all Internet content that flows through your enterprise. Symantec Content Security solutions deliver

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THE MAD DAYTRADER.

THE DISGRUNTLED SABOTEUR.

perform industrial terrorism, and even hold your business for ransom.

WHO KNOWS WHAT EVIL LURKS IN THE OFFICE NEXT DOOR?

Take the guy down the hall who looks like he's working while he downloads inappropriate content or trades stocks, follows auctions, shops, posts resumes, surfs for hours, or catches

technologies for scanning Internet and e-mail content, and screening viruses and malicious code intrusions.

So please log on to www.symantec.com/enterprise-security or call 800-745-6054, ext. 9TT2, for more comprehensive solutions to your Content Security issues.

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for more information or to speak to a sales representative now.

New Economy

Opportunities and Risk in a Changing World

Playing for Keeps

Companies better get serious about playing around with computer-based models if they want to remain competitive

BY MICHAEL SCHRAGE

THE IRONY OF the personal computer revolution is that the PC itself didn't create the initial spark—it was the software spreadsheet.

When VisiCalc, the first low-cost spreadsheet software, appeared in 1979, it immediately appealed to Wall Street analysts who were sick and tired of recalculating spreadsheet after spreadsheet on paper. They cheerfully shelled out more than \$2,500 apiece to buy VisiCalc and an Apple II personal computer simply to be able to reduce the time and tedium associated with the manual approach. Within five years of the introduction of VisiCalc, more than 1 million software spreadsheets (and the computers needed to run them) were being sold annually. Within a decade, North America's financial culture had become a spreadsheet culture. Spreadsheets became the medium, the method, the tool and the language of all serious financial analysis.

But VisiCalc's brilliance transcended automation. The same technology that slashed hours from budget recalculations also enabled its users to build alternate spreadsheet realities cheaply. Indeed, low-cost spreadsheet software effectively launched the largest and most significant experiment in rapid prototyping and simulation in the history of business. The culture of finance



had never seen a tool like it. Financial models that had once cost thousands of dollars to design and build now cost thousandths of a penny. The marginal cost of modifying complex spreadsheet models plummeted to near zero.

The spreadsheet is just one example of how the computational costs of prototyping products, simulating services and modeling business options are shrinking into insignificance. It's becoming ever easier, cheaper and faster to explore new ideas.

Prototypes like the spreadsheet engage the organization's thinking in the explicit. They externalize thought and spark conversation. A truly effective physical prototype of a personal computer or an automobile dashboard goes beyond the visual to appeal to the tactile and the kinesthetic. A genuinely creative spreadsheet simulation of a budget crisis evokes a "suspension of disbelief" that activates the adrenal glands along with the mind. The conversational competitions and design

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debates that these shared models ignite forge collaborative creativity and fire innovation.

Consequently, these models are not just tools for individual thought. They are inherently social tools and mechanisms for collaboration. Models and the human interactions and conversations that go on around them cannot be arbitrarily divorced. There is an ecological dynamic between interaction and iteration: New interactions lead to new iterations, and new iterations lead, in turn, to new interactions. Models turn out to be more about mediating interactions between people than mediating interaction between information.

That means translating the different languages of modeling in a company into one that everyone can understand. For example, finance-trained MBAs are typically far more comfortable manipulating spreadsheet simulations than are liberal-

a hypercompetitive and volatile marketplace measures a different kind of speed; its focus is the needs of customers and clients rather than the speed of the innovator. The single variable that customers and clients care most about is their own mean-time-to-payback—the speed at which they believe they will get payback from purchasing a product or service.

The customer's perceived mean-time-to-payback, not the innovator's speed-to-market, effectively determines which innovations will dominate a market. The faster the payback, the better the chance that an innovation can create a meaningful market for itself. No other metric is more important. Indeed, the business history of the digital innovation is a story of ever-accelerating mean-time-to-payback for people who purchase silicon and software. Dan Bricklin, cocreator of Visi-Calculc, attributes the success of the spreadsheet that launched

the PC revolution to the financial analysts who believed that the system paid for itself in under a week.

Companies must develop internal metrics for their prototyping processes that reflect their particular customers' mean-time-to-payback ex-

pectations. For example, Swedish low-cost furniture maker Ikea calculates the manufacturing costs of its furniture prototypes down to a fraction of a krona: Cost-to-build is explicitly defined as Ikea's single most important criterion, because customers have come to expect prices to be as low as possible. Ikea customers have grown comfortable with assembling the furniture themselves as part of that bargain. At Steelcase's New York City prototyping showroom, customers' length of visit was identified as a telling gauge of their interest in Steelcase systems. World-class companies whose designs differentiate them are careful to use mission-critical measures in their prototyping processes.

Outside the marketplace itself, there is no better way to gain insight into individual and organizational behavior and to promote value-creating behavior than through the use of prototypes. They will become an ever more important investment in the quality of an organization's human capital and its innovation capacity. The smartest, most creative people in innovative organizations already spend more time interacting with more versions of models of their most important products and services than ever before. Tomorrow, they will spend even more time. But will that time be spent more productively? How will they—and their investors—know? **CIO**

The single variable that customers and clients care most about is their own mean-time-to-payback.

arts-trained salespeople. What kinds of conversations help bridge those gaps? Who manages them?

These questions become even more important as modeling within companies becomes more democratic and widespread. For example, engineering organizations have found that nonengineering managers and marketers want to play with CAD software to test their own product ideas and enhancements. Such "amateur CAD" signifies a growing democratization of design promoted by pervasive and accessible modeling technology. The changing nature of the modeling medium is forcing design professionals to manage the prototyping efforts of design amateurs. The declining cost and rising importance of prototyping is broadening the community of designers.

As this community continues to broaden, what should be the goal that unites it? Many companies have latched onto speed-to-market as the primary payback for a fluid, rapid prototyping culture. But the mantra that speeding innovations to market is the key to competitiveness is dangerously misleading. High-tech companies and innovators who redesign themselves around that belief may be rapidly accelerating down the wrong side of the innovation speedway.

Speed-to-market might well be the most misunderstood management metric around. It's true that most companies, from Boeing and Chrysler to Intel and Cisco, reap competitive advantage by slashing months from product-development cycles. But that's unlikely to be the real reason they're leaders in rapid innovation. The innovation metric that matters most in

How do you play with your business? Tell us at neconomy@cio.com. This column is excerpted from Michael Schrage's book, *Serious Play: How the World's Best Companies Simulate to Innovate* (Harvard Business School Press, 2000).



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What You Don't Know Can Hurt You

We Take Visas

How one company uses IT to navigate the labyrinth of foreign-worker regulations

BY DANIEL MOORE

AS THE NUMBER of foreign IS workers in the United States grows, so do the challenges facing companies that employ them. For example, at Syntel—a provider of IT services and e-business solutions—more than 60 percent of our current U.S. staff consists of foreign workers, almost all within IT. As a result, we are constantly dealing with a major challenge: complying with immigration and naturalization regulations.

For those of you who haven't yet begun to rely heavily on foreign workers, let's briefly review the process: First, a prospective employer must establish that there is a shortage of U.S. citizens to fill a certain type of job. The company then locates a foreign worker and applies for a temporary visa from the Immigration and Naturalization Service (INS) for that person. The worker can be hired when the visa is approved. If that employee wishes to remain in the United States after the visa expires, the company needs to file for an extension.

The rules regarding work visas for foreign employees are strict, and the consequences of noncompliance can be steep: significant fines, removal of the affected workers from the country, criminal penalties for officers of the company, even a

total ban on hiring workers outside the United States.

In the past, managing immigration requirements at Syntel required huge amounts of time. Our legal, human resources, recruiting and accounting staffs kept track of employee data individually. Each department's process was largely manual, which was not only slow, but there was great potential for inaccuracies that might make it necessary for a valuable employee to suddenly leave the country and a key assignment.

To unify our systems, reduce dependence on manual data entry and ensure compliance with government regulation in both the financial and immigration areas, we recently decided to implement the PeopleSoft enterprise resource planning system. However, we found no commercial software package capable of handling our complex immigration compliance requirements. Instead, after conducting extensive interviews to find out about the workflow in question, IS managers cre-



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—THOMAS JEFFERSON [FOR THE MOST PART]

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ated a system from scratch using the PeopleTools application developer—a single, integrated development environment that simplifies the application customization process. IS did a tremendous job of designing a system that helped the people doing the work get their work done, as opposed to designing a system that was effective only in theory. Now Syntel can coordinate every phase of the immigration process.

First Things First

The first step in hiring outside the United States is to file a Labor Condition Application (LCA), which provides the INS with notice of the need to hire foreign workers. The LCA is based on labor department surveys that identify shortages in certain professions, and it is valid for a limited period for specific jobs, salary ranges and locations. Syntel's new software module tracks each LCA held by the company to ensure that we know how many employees have been hired under each open LCA and how many slots remain. If an employee is transferred from one location to another, the software moves his or her data to the

The work visa rules are strict, and the consequences of noncompliance can be steep.

new location's LCA. It also tracks the expiration date of all LCAs and notifies the legal department when it's time to reapply.

In the meantime, overseas recruiting offices are interviewing job candidates. The HR department enters selected candidates into the PeopleSoft system, which subsequently tells the legal department to apply for an H-1B visa for that employee. (The H-1B is a temporary visa category for nonimmigrant workers.) The information required when filing for the visa, such as the degree certificate and passport, is collected outside the system, but the software manages the numerous documents that must be filed as well as all communications with the INS.

The software keeps track of the status of each application, notifies appropriate staff members of steps that need to be taken and generates reports that let managers know when new employees will be available to work on projects. In the past it was difficult to determine the status of a worker's visa application at any given point; now a member of the HR department, for example, can log in and check the situation, even while the application is in the hands of another department. When an employee's visa is approved, the information in the immigration module is added to the PeopleSoft human resources module. The system will not move an applicant's information to the employment rolls until all of the necessary documentation has been completed.

Application Accepted—Now What?

The rules don't become any simpler after a foreign employee comes to the United States, and as a result, neither does the software. Once the INS has allowed us to take on a foreign worker, it is up to us to make sure that worker maintains a valid visa. Employees with H-1B visas are classified as nonimmigrant workers, which means they must leave the United States when the visa is up. H-1B visas are issued for one to three years. The immigration module keeps track of expiring visas and notifies the legal department in time to apply for an extension. The INS can take four to eight weeks to process the application, so we like to file for extensions three to four months in advance. However, people with H-1B visas often decide to apply for permanent residency once they arrive. Because there is a six-year limit on the total life of an H-1B visa and it can take five years for the INS to grant permanent resident status, the immigration module must notify the legal department to file for residency toward the end of the employee's first year in the United States. That process involves 20 to 40 discrete

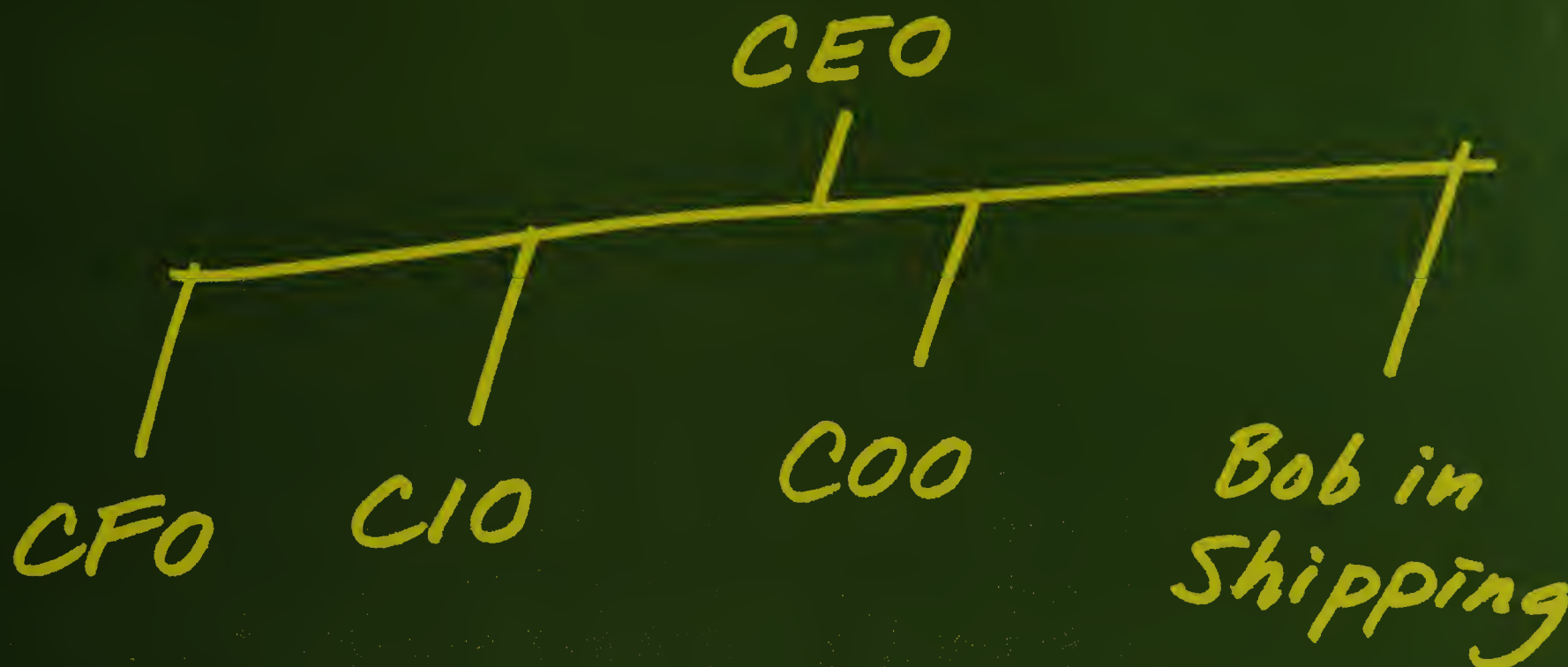
steps, each requiring us to contact the INS and file certain documents or records. The immigration module tracks which steps have been completed and which need to be taken at any given time. The system has improved the legal staff's productivity by identifying all employees for whom a cer-

tain step needs to be completed, so the steps can be completed together in a batch. It also tracks the process of applying for visas for an employee's spouse and children.

The immigration module also keeps track of other, less common types of visas. For example, sometimes the company transfers an employee from an overseas operation to the United States for a specific project or hires foreign students educated at a U.S. university who decide to remain in the country for what is called "practical training." The module tracks expiration dates of these visas, which are normally good for one year. It also manages the new visas created for Canadian and Mexican citizens as part of North American Free Trade Agreement legislation.

The project has already paid for itself. The new immigration module saves enough time every year to free up many staff members for more creative tasks. Managers now can avoid missing a paperwork deadline and losing a key employee because of visa problems. There's irony—or elegance—in the fact that the insatiable need for IS professionals is what created the visa tracking problem, and those same professionals' skills enabled us to automate the process of hiring them. **CIO**

If you have observations about places where law and IT intersect, write to us at fineprint@cio.com. Daniel Moore is lead in-house attorney and chief administrative officer at Syntel in Troy, Mich.

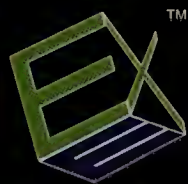


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Ask the Expert

We're Not Experts on This, but We Know Someone Who Is

Trading Places

Thomas Koulopoulos, president and founder of The Delphi Group, a Boston-based e-business consultancy, answered readers' questions on CIO.com about his area of expertise, business-to-business portals.

Q: B2B portals seem to be springing up from many sources. What types have the best chance of long-term success?

A: At The Delphi Group, we have identified 200 of these portals. It is clear that the value migration in the equities markets will beat a path directly to their doorstep. This momentum will obscure the long-term value plays. But when the dust settles, it is clear that the greatest value will be found in those vertical portals (vortals) that do the best job at three tasks:

- 1. Trade crossover:** the ability to create new markets by aligning supply chains with demand chains.
- 2. Trade support:** providing services that make a market more efficient, not just more complex (for example, legal, financial, administration and so on).
- 3. Trade syndication:** creating a market where the business value of experience can be syndicated to form new communities the same way content is today syndicated to form webpages.

Q: I have a couple of questions: We are a traditional media outlet that is struggling to create a dotcom division. Where do you



start? That is, what are the basic steps that need to be covered before the RFP stage? Also, the company principal has decided to "lead" the new dotcom division, despite a rudimentary understanding of the Internet and no understanding of back-end issues or how to deal with consultants and higher-level technology issues. Should I try to stop this guy, treat this as his educational opportunity or quietly manage the project from the shadows?

A: Actually, you are asking only one question. Your second question answers the first. The challenge for traditional companies in traditional industries is usually a cultural one—often starting at the top. However, your perception of this as an educational opportunity is spot on. Sponsorship is the hardest thing to come by when deploying new technology. If you have it, use it. As for the mechanics of an education, find a way to

ILLUSTRATION BY LARRY GOODE

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Ask the Expert

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Q: In my opinion, vortals are one of the most important opportunities for small and medium enterprises (SMEs) to achieve an e-commerce advantage. But how important is big-business sponsorship for B2B vortals? In other words, is it possible for a group of SMEs to create aortal without having an important enterprise (General Electric, for example) guarantee the traffic for them?

A: Great question. In short, yes it is possible, as long as the SMEs have a sufficiently cohesive community. It's the community that provides the momentum and value for aortal. Historically, large companies have locked in large communities of suppliers in the formation of their supply chains, but in an e-market, this dynamic can quickly be eroded as time to community compresses, allowing new value chains to form in far shorter periods of time.

Q: Do you think XML will overtake EDI as the preferred data exchange medium for B2B transactions?

A: Absolutely. XML will become the platform for e-markets. In addition to its wide acceptance and support by e-market players, XML differs from EDI in one fundamental aspect—it is inclusive rather than exclusive. In other words, EDI provides narrow channels of transaction exchange between highly regimented standards in closed communities. XML allows for a much more open environment that leverages the ability to syndicate transactions throughout partners across industries.

Q: As a business leader for a financing company, I'm interested in developing a B2B portal for my customers and their suppliers. What are the most important things for me to keep in mind as I develop this site?

A: You've hit on one of the most underplayed aspects of vortals—that is, the formation of a community that provides the business services needed to support B2B transactions. As the velocity of a market increases, the efficiency with which key services, such as financing, are delivered must also increase. Unfortunately, much of this discussion to date has focused on the commoditization of financial services through online banks that promise to disintermediate the financial process. That's a shortsighted solution. The greatest value play for a financing organization would be to offer a reintermediated approach to financing. You see this in the business-to-consumer segment through services such as LendingTree.com. The key is to offer a mechanism that matches the right lender with the right transaction. In this sort of market, the financing institution may actually create markets by identifying transactions and lenders that never knew each other existed!

Q: What kind of B2B is "actually" happening in the industrial construction arena?

A: Construction is one of the key industries for the formation of vortals (www.thevortals.com). Ironically, the most literal example of brick-and-mortar may end up being one of the best examples of overcoming the challenge of transforming to click-and-mortar. I recently met with a company that purports to be one of the largest manufacturers of brick in the world, and their biggest concern was not Will we transform? but rather, Do we create aortal or participate in one? Few industries are as fragmented regionally as the construction industry, where localized business and distribution channels are a standard part of the culture and business model. This results in enormous market competition driven by equally enormous market inefficiencies. You have to ask, If these inefficiencies are mitigated, how will the competitive nature of this industry change? Initially, most of the B2B will be subject to the localized nature of this business, and as a result I see myriad minivortals springing up, which are in turn consolidated through industry megavortals, such as Cephren. But unlike the General Motors-Ford-DaimlerChrysler purchasing alliance announced recently, global consolidation will probably be much slower in this space. **CIO**

Ask the Expert

Have a question about **online retailing**? **Gordon Jones**, CIO of Santa Clara, Calif.-based software retailer Beyond.com will be available to offer insight on online retailing, including infrastructure, logistics, security, locality and integration issues. Post your questions for him now until June 30 at www2.cio.com/CIO/expert or e-mail questions to asktheexpert@cio.com.

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Q: How do the portal business models make revenue? They must sell a lot of advertising.

A: Actually, the billboard model is the lowest form of business model and one that is likely to be the least attractive to the creation of a long-term value proposition for aortal. A model that charges either a fee for subscription to the service and then a per-transaction fee (usually percentage-based) is much more likely and attractive.

If you would like to recommend an expert for this column or suggest a topic, please e-mail CIO Senior Writer Daintry Duffy at dduffy@cio.com.

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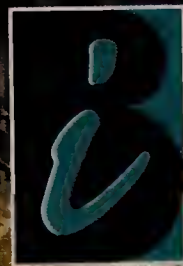


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Be NIMB be QUICK

Does rapid change make planning obsolete? No way. Today strategic planning is more important than ever. BY ELANA VARON

Cynthia Egan, president of Fidelity Investments' Charitable Gift Fund, knew she had to trim transaction costs and make it easier for contributors to manage their accounts, or they would choose a competing fund. Donors don't want their money going to overhead, so low administrative costs are a big selling point for any charity. When a routine customer survey revealed that at least two-thirds of Fidelity's fund donors had Internet access, "we realized we had a tremendous opportunity" to both cut costs and improve customer service, Egan recalls. In just nine months, the fund established a website through which donors can set up accounts, get advice on how to be a philanthropist and manage their donations. Since Fidelity launched the site last September, donors have made 32 percent of their contributions online. It takes the company only a day to cut the checks for these donations, compared with as much as a week to process paper contributions. Cost are down, and customers are happier, Egan says.

Reader ROI

- Read why you still need a strategic plan
- Learn how to plan for the long term when time is short

PHOTO BY GEORGE SIMIAN



LE,

Cynthia Egan (left), president of Fidelity Investments' Charitable Gift Fund, and **Lorraine Hubrich**, senior vice president of technology and donor servicing, have changed their planning process to include more frequent updates.



“The things we try to put in granite are the principles we’re trying to achieve and the drivers that are pushing us toward them.”

—GREGOR BAILAR, CIO, NATIONAL ASSOCIATION OF SECURITIES DEALERS

How did Fidelity do it so quickly? The project was not envisioned in the fund’s three-year IT strategic plan, which focused on maintaining mainframe-based accounting and investment tracking systems. But it was considered so urgent that Lorraine Hubrich, senior vice president of technology and donor servicing for the Boston-based fund, dedicated an 11-member team, which was working on upgrades to legacy systems, to quickly craft a Web business strategy and build the new systems. “We changed how virtually every transaction comes in here and how it was going to be done,” Egan says.

The fund’s IS staff built the infrastructure and applications that support the site by both adapting solutions that were being used by other Fidelity units and designing some functions from scratch. In the process, they also transformed how the fund plans its IT investments. “We do more in phases, so we can roll out something every quarter or every couple of months,” Hubrich says. As a result, she now revisits her strategic plan more often. The company’s IT strategic plan still looks ahead three years, but instead of updating it annually, Hubrich and other top executives now review it twice a year.

Fidelity’s example is just one of many that might make you think that, with IT requirements changing so rapidly, long-term plans no longer have any use. And indeed, some make that argument. But they’re only partly right. True, the days are gone when you could map your technology growth path for five years, making only annual course corrections, and assume your basic infrastructure and applications wouldn’t change much. Now, business plans and technology are in constant flux. Nevertheless, strategic planning is more important today than ever before, and it is

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the very speed of change in today's business climate that makes it so.

"It would be death to the organization to not have an IT strategy," says Esther Delurgio, CIO with the shipping company BAX Global in Irvine, Calif. The rise of electronic commerce has made most companies dependent on IT, "so if you're just in maintenance or caretaker mode, the competition will go in front of you."

Fidelity's Egan agrees. "Customers have very high expectations for service [and] a bird's-eye view of how [account] administration is supported and served," she says. The company couldn't meet customers' demands for better, faster service without a plan to put the right IT resources in place.

The nuts and bolts of strategic planning haven't necessarily changed. But there are new techniques and approaches for developing the plans you need in the time you have. Here, CIOs and experts share their tips.

Keep It General

BY NOW, it's old news that you need support from business-line executives for any IT project to succeed. But it doesn't necessarily follow that your strategic plan for IT lines up with your company's business strategy. If you're basing your IT plan on what your internal customers are asking for right now, you're always going to be playing catch-up, says Michael Grant, who heads the global strategic information technology practice for Chicago-based consulting firm A.T. Kearney. In nimble companies, especially those that are moving their business online, the IT strategic plan and the business strategic plan are now often one and the same, and they lay out broad principles rather than prescribe specific action.

"The things we try to put in granite are the principles we're trying to achieve and the drivers that are pushing us toward them,"

says Gregor Bailar, CIO with the National Association of Securities Dealers, which owns the Washington, D.C.-based Nasdaq stock market. "We use that as a guiding light, as opposed to a step-by-step map. That's more consistent with the way this world works."

One of Nasdaq's principles, for example, is that the Nasdaq network be modular, so that the company can add capacity as trading volumes increase. It's a goal that matches up closely with Nasdaq's business plan, which anticipates trading—now averaging almost 2 billion shares daily—to continue to expand exponentially.

So the principles hold steady, but how Bailar goes about executing his plan can change on a dime. A technology steering committee composed of IS and business executives meets monthly to talk about the status of current projects and to bring up new requirements. "We don't assume that

A Strategic Staff

Hiring trained strategists can help CIOs keep up

GENERAL DYNAMICS' Advanced Technology Systems (ATS) group has put an executive in charge of strategy because planning is now done continuously. "It's somewhat like painting a bridge," says Vice President of Strategy and Development Philippe Wiener, in that as soon as you think your strategic plan is finished, it's time to start over.

ATS isn't alone. Intel has an IT strategic planning staff that reports to the company's CIO and works full time assessing the latest technologies and studying new business models. In today's fast-paced economy, "you can't afford to think once a year about where you're going," says Intel's Director of IT Strategy and Technology Mary Murphy-Hoye. "It has to be built into the fabric of what you do [because] events may be occurring that will have an impact on the vision you're describing."

Steve Berg, senior manager for consumer markets with KPMG Consulting in Radnor, Pa., says more CIOs are hiring trained strategists to take charge of their planning because having this expertise enables them to focus on what the business side wants and helps them sort through the long list of projects competing for funds.

At BAX Global, CIO Esther Delurgio says strategic planning is part of one manager's job description, and she's made trend-spotting a part of every other manager's job. "It's almost embedded in our day-to-day work," she says. Even so, Delurgio adds that she probably should have even more staff devoted to strategizing.

Meanwhile, Fidelity's Charitable Gift Fund has "facilitators" whose job it is to canvass external customers, internal end users and parent company Fidelity Investments' corporate IT group for ideas about future requirements and technology trends. Lorraine Hubrich, vice president of technology and donor services, says they're the people who "really understand where the business has to go" and can recommend whether the company should, for example, build a new system in-house or outsource it.

It's important for a company to have a senior executive whose job is to focus on strategy, according to ATS's Wiener, because this person communicates with every part of the organization. Not only does this high-level strategist convey the corporate vision throughout the company, he or she also helps the company line up its business units' plans with what they need to carry them out.

—E. Varon



“We don’t have people filling out gobs of data sheets, and we’re not doing it for anybody but ourselves. We have a short set of metrics pertinent to our business.”

—PHILIPPE WIENER, VICE PRESIDENT OF STRATEGY AND DEVELOPMENT,
GENERAL DYNAMICS’ ADVANCED TECHNOLOGY SYSTEMS GROUP

the budget is the budget for the year,” he says. When Nasdaq decided last fall to extend afternoon trading by two and a half hours daily to accommodate investor demand, Bailer had 30 days to prepare five systems to record the extra stock trades and report prices to dealers and financial information services. Bailer had planned to make these upgrades eventually, but business needs dictated that he make the

necessary changes earlier.

“This is absolutely not a new situation,” says A.T. Kearney’s Grant. “An IT strategy is supposed to be based on business value, and there’s no business strategy that doesn’t go through a constant realignment process. A lot of CIOs are getting closer to the real world, rather than coming up with some sort of hypothetical IT architecture that can go anywhere, anytime.”

Pick Your Tools Carefully

THERE’S NO doubt that traditional planning tools are still useful, but CIOs no longer have time to break out the entire toolbox, says Richard Swanborg, president of consulting firm Icx in Boston. “They don’t want a real formal methodology,” he says. “Many CIOs pull out the components of a formal methodology that are most relevant”

to the problem they need to solve—establishing a process for making capital improvements, for example. Swanborg calls these “mini methods.” Once they get beyond the basics of where to invest in infrastructure, [they realize] there isn’t a need to go through a full-fledged strategy methodology.”

Instead, CIOs can focus as needed on what competitors are doing, exploiting new technologies, improving internal operations, evaluating supplier relationships or other components of a traditional IT strategy.

General Dynamics’ Advanced Technology Systems (ATS) group had to craft a brand-new IT strategy after the division of the defense giant was purchased from Lucent Technologies two and a half years ago. “Lucent is a very centralized company,” says Lou Von Thae, senior vice president of ATS in Greensboro, N.C. Planning used to be a matter of satisfying corporate demands for data, with little input from line executives.

After the acquisition by General Dynamics, ATS developed a new IT strategic plan

that is driven by its product strategy and employees’ collaborative work styles. The division produces custom communications software and electronics for the U.S. Navy, and has, since joining General Dynamics, been pursuing commercial contracts for similar types of products. ATS has dispensed with much of the data collection that AT&T demanded. Philippe Wiener, vice president of strategy and development, says the division still uses traditional strategic planning methods—such as comparing ATS’s IT portfolio to industry benchmarks and surveying where key technologies are heading—“but we don’t have people filling out gobs of data [sheets], and we’re not doing it for anybody but ourselves. We have a short set of metrics pertinent to our business.”

When an urgent need arises, the ATS IS staff can act quickly because they don’t have to do lengthy studies before deciding what types of systems to deploy. Last December, executives decided they needed an e-commerce system to speed transactions with ven-

dors that supply components for the division’s products, and they gave the IS staff six months to deliver. A system for electronic funds transfer and online transmission of purchase orders and engineering drawings is planned to be deployed this month.

It wasn’t a surprise to ATS’s IS planners that they would be automating purchasing of components one day: Modernization of the division’s procurement systems has been going on for “the past few years,” according to Wiener. But when executives realized e-commerce was critical to meeting manufacturing deadlines demanded by their customers, they put the project on a fast track. Planners had to design a system almost from scratch.

Although they used tried-and-true strategic planning methods—assessing their current procurement process, evaluating the state of e-commerce technology and checking for compatibility with their suppliers’ systems—Wiener says they were able to do this quickly because they did not have to follow a one-size-fits-all process. The experts on pro-

Acting Fast

Don't like surprises? Strategic planning can help.

WHEN EXECUTIVES at Intel heard that Ford Motor Co. and Delta Airlines would give PCs to all of their employees to use at home (see “The Home Field Advantage,” *CIO*, May 1, 2000, Page 50), they decided Intel had to get in on the trend. Three weeks later, Vice President of IT Doug Busch had put together a program offering home PCs and Internet access to more than 70,000 employees worldwide.

Busch says he was able to respond quickly because he is used to doing projects on the fly. “We’ve become a lot more agile over the past two or three years.” Rapid project development is possible, Busch says, if you make your own luck, thinking ahead about what your future needs will be and, when surprises come along, looking for ways these unanticipated projects can build on work you’re already doing.

The PC project wasn’t something Busch had planned for, but it dovetailed with another part of Intel’s IT strategy. Shortly before the company announced the home PC benefit, Intel had launched a virtual private network to support remote access for its workers.

Busch’s staff had already researched the kinds of equipment, services and support employees would need to work offsite, so they knew how to outfit home users.

From there, Intel managed the project like any other. Work got done quickly, Busch says, because the project team was allowed to make decisions and was in daily touch with executives to resolve problems or get approval when needed. “Many decisions are made very quickly over e-mail,” he says. Although the IS department was in charge of the project, Busch worked closely with finance and human resources executives who had to weigh in on how to pay for it and add it to Intel’s employee benefits package. The three put together an eight-member planning team that included experts in technology, financing, employee benefits and public relations, while another 20 staff members were called into planning sessions as their knowledge was needed.

“The timing turned out to be excellent,” Busch says. “IT was ready to go, and we were able to assemble a team with expertise.”

—E. Varon

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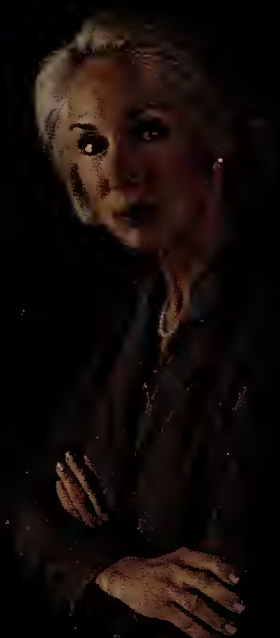
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curement and e-commerce from ATS's supply chain team and the IS group focused on the aspects of planning that were most relevant to the project, without much corporate oversight. "The only drive was to do it, not satisfy me with paperwork," says Wiener.

Set Your Imagination Free

IN SUCH a volatile environment, it's not enough to revisit your strategy frequently and adjust it to fit current business conditions. Jim Herman, senior vice president with consulting firm Nervewire in

Boston, says it's crucial to imagine multiple scenarios and give some thought to how you would respond to them. "You look at multiple ways your environment might change and you use that to create a framework about the future that takes more kinds of discontinuous change into account."

Such scenario planning can help CIOs cope with surprises by anticipating both obstacles and opportunities that could affect how their companies achieve their goals. (See "Don't Stop Thinkin' About Tomorrow," *CIO*, Dec. 15, 1999/Jan. 1, 2000.) Herman's organization, for example, guides clients through a "future mapping" process, during which executives describe events that might occur in the not-to-distant future (say, five years) that would affect their business or industry. Then they define several "end states," or visions, of what their companies might be doing at the end of the period. Executives then construct a path toward each end state, which they can use as the foundation for strategic planning.

The process "allows you to think through the critical path of what you have to get right in order to succeed, and what must be prevented from happening," Herman says. "Being future oriented [also] creates pull" for CIOs, who can use the scenarios to set investment priorities, rather than give in to pressure from business units to fulfill a backlog of small requests. He says it helps to put distasteful or radical scenarios on the table to get you thinking about how your company can prepare for far-reaching changes in technology, markets or business models.

At Intel, outlining different business scenarios allows the IS organization to respond quickly to demands from both internal and external customers, as well as cope with sur-



When we see a technology coming at us, we'll decide whether this is where we want to go and that we want to trigger it as certain criteria are met."

—DOUG BUSCH, VP OF I.T., INTEL

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“You need to have your own sense of where things are moving, so if it becomes clear you’re moving in the wrong direction you can make a change.”

—WILLIAM FULMER, SENIOR FELLOW, HARVARD BUSINESS SCHOOL

prises. IS executives at the company meet three to four times a year with different groups of Intel business executives and technology experts to talk about emerging technology, new business models and Intel’s future. Meanwhile, Vice President of Information Technology Doug Busch keeps a running dialogue with internal customers and talks “virtually weekly” with his staff to gather new information and adjust existing plans. Out of these discussions come ideas for how new technology might help Intel reach its corporate goals.

The company earmarks part of its IT budget for research and development, and Busch uses this money to test out these new ideas. “One of the strategies I’ve tried to introduce is establishing strategic intent. When we see a technology coming at us, we’ll decide whether this is where we want to go and that we want to trigger it as certain criteria are met.” One criterion might be whether his staff thinks the technology is stable enough to deploy; another may be how many end users want it.

Two years ago, Intel’s IS staff did some research that concluded employees would be more productive if they weren’t tied to their desks, so Busch started replacing desktop PCs with laptops. Wireless technology was starting to show promise as a mobile computing tool, and Intel executives asked Busch to consider it for future deployment.

Busch started a pilot project that would define a usage model for what was still an emerging technology and gauge its impact on Intel’s network infrastructure. But it wasn’t until a budget meeting last winter, where senior executives asked him about how some new corporate office buildings would be net-

worked, that he started to consider broad deployment of wireless systems. Within weeks, the company had decided to roll out the wireless networks by mid-June to a few groups of workers at its Folsom, Calif., facility, where the pilot had taken place. At press time, executives were getting ready to set a schedule for installing the technology in other locations. Busch says he’ll fine-tune his deployment strategy every three months to account for new technology developments.

Busch and his staff were able to put together a wireless networking strategy quickly because they had taken the time to speculate about the company’s use of the technology and test their theories. When business-side executives decided it was time for wireless networks, the IS organization was ready with company-specific metrics.

Mary Murphy-Hoye, Intel’s director of IT strategy and technology, says scenario planning, along with research and development, prepares the IS organization to respond to business demands even when they seem to come out of the blue. (See “Acting Fast,” Page 90.) “The surprises will come,” says Murphy-Hoye. But “now we have a context for dealing with them. [If something] comes from left field, [we can ask,] ‘does it fit into our overall strategic discussion?’”

Always Have a Backup Plan

MAPPING OUT the future can also help CIOs recover if they make the wrong bet. “You need to have your own sense of where things are moving, so if it becomes clear you’re moving in the wrong direction you can make a change,” says William

Fulmer, a senior fellow at Harvard Business School in Cambridge, Mass., and author of the new book, *Shaping the Adaptive Organization* (American Management Association, 2000). “I would probably spend more time asking ‘what if?’”

Nasdaq’s Bailar has his staff prepare a “Plan B” that describes alternative ways to meet their goals if a major IT initiative doesn’t pan out. “We sometimes have projects that appear to be overlapping [because that] provides more maneuverability,” he says.

Of course, most companies don’t have to move as quickly as Nasdaq does. Nevertheless, every company is facing an increasingly rugged landscape it has to map to survive.

Today, Fulmer says, companies are fighting guerrilla warfare. In a conventional war—like the old days of strategic planning—the generals spent lots of time reviewing the plans. “With a guerrilla war, you give [soldiers] the right tools and you hope they’re going to be able to win. You don’t have the same degree of control.”

Yet there’s the potential to be even more successful than before. So many five-year strategic plans end up on the shelf or, worse, result in systems that the business doesn’t really need. “We’re coming away from an academic perspective of IT strategy,” says A.T. Kearney’s Grant. “The more IT strategy gets tied to business direction, the higher the likelihood for success. Success will be measured in the businessman’s eyes.” **CIO**

Senior Writer Elana Varon never goes anywhere without her planner but still keeps her fingers crossed. Share with her the IT planning strategies that work for your company at evaron@cio.com.



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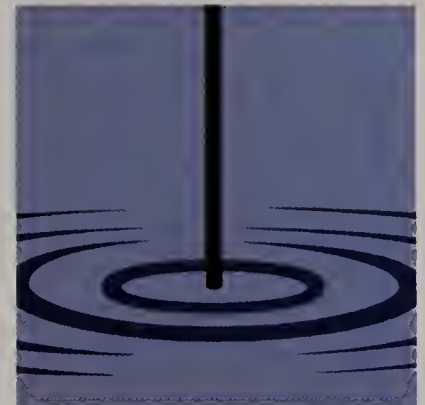
A MATTER OF LIFE & DEATH

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NCE AGAIN, THE I.S. ORGANIZATION IS READING ITS OWN OBITUARY.

The current buzz is that IS is a lonely dinosaur waiting to be wiped out by the rise of e-commerce and its inherent demands for faster, more flexible technology management. E-commerce is only the latest in a long line of meteorites that have been purportedly headed toward IS, but it is by far the biggest and most lethal so far. The demands of e-commerce surpass the capabilities of IS, the forecasters say. Combine that with the tremendous growth of IT outsourcing, the emergence of business executives making technology decisions, the renewed debate over whether the CIO's role is strategic or tactical, and you see strong evidence that IS is headed straight for the carbon layer.

After reading all the analysts' reports, challenging the doomsayers and interviewing more than two dozen senior business leaders, we found that the traditional IS organization is going away, to be replaced by a new group of "relationship managers." In this special report, we will identify the real forces of change and how ultimately they will force the IS organization to evolve—or, yes, expire. Based on the expert advice we've sought, we'll also offer tips for building the IS organization of the future and will introduce some CIOs who have already built theirs.



A Special Three-Part Report BY TOM FIELD

Executive Summary

For years, reports of the death of IS have been greatly exaggerated. Today that's no longer the case. Can IS come back from the brink? .100

Leadership Agenda

So what if the IS empire is shrinking? The new agenda leaves you free to lead.114

Case Studies

Several CIOs have already made the changes necessary for IS survival.126

Senior Editor Tom Field covers contract IS services and staffing issues for *CIO*. Do you think IS is in trouble? E-mail Tom at tfield@cio.com.



FOR YEARS, REPORTS OF THE DEATH OF I.S. HAVE BEEN GREATLY EXAGGERATED. TODAY, THANKS TO NEW TECHNOLOGY OPTIONS, THAT'S NO LONGER THE CASE.

CAN I.S. COME **BACK**
FROM THE
BRINK?



ince the IS organization's inception in the 1960s, predictions of its demise have been outnumbered only by the death wishes of IT users who know all too well the group's hard-earned reputation for being quick to spend, slow to deliver and hopelessly out of touch with business needs.

At least, that's what users perceive to be the case. And the reality of IS's fortunes has always been shaped by the perceptions of internal management, users, the press, the gurus and

the analysts. Unfortunately, IS has always stubbornly refused to acknowledge that the best way to combat perceptions is through good marketing of its successes. Instead, IS has always retreated into its culture of self-effacement and quiet hard work, which has done nothing to alleviate perceptions rooted in ignorance or misunderstanding. Yet if the rest of the organization doesn't really understand what IS does, how can it value IS's services?

This long legacy of lousy "brand management" by IS organizations and the frustrated demands of users have snowballed over the years into a more or less constant IS death watch. Users root for their IS departments to get outsourced. CEOs don't see the organization adding any value, while IS employees work long hours delivering long lists of supposedly urgent, but ultimately undervalued, technology projects.

Responsibility for this sorry image paradox sits squarely with the CIO. And now with the possibility and the capability to actually begin to move complex systems out of the depths of IS and into the hands of outsourcers, ASPs, portals and other external providers, it may be too late to sell the virtues

of this tarnished brand—unless CIOs can radically restructure their departments and their messages to the business.

The challenge is extreme and unfair because success depends not just on dealing with current market realities but also on correcting these long-held perceptions—justified or not—about the way IS does business. Here are some of those perceptions.

PERCEPTION

CEOs Don't Believe in Their IS Departments

At a time when chief executives finally seem to get it—they understand IS's potential as a strategic business driver—they also betray an alarming lack of confidence in their own IS organizations and leaders. In a recent survey of 650 CEOs and senior business executives worldwide, Compass America, a Reston, Va.-based management consulting firm, found that 75 percent of CEOs expect IS to make a significant or at least an average contribution to bottom-line business results, yet only 25 percent feel IS currently measures up to these expectations.

Are these expectations realistic? Doesn't matter, says Gregory Smith, executive consultant at Compass. CEOs don't feel they're getting enough from their IS organizations, and these frustrations are translating into new pressures to transform—at a time when the marketplace offers more opportunities for business executives to effect such sweeping changes. "CIOs and IT departments are being forced to be more like business partners," Smith says. "They can do it on their own, or they can be dragged kicking and screaming. But the way to preserve the IT organization is to be a true business partner."

Phil Schneidermeyer, a senior-level recruiter for Korn/Ferry International in Stamford, Conn., confirms the survey's findings. "My clients can't build their businesses without a good CIO," he says. "But there is a lot of high-level change coming because senior executives are saying that their incumbents are not capable of getting them where they need to be."

PERCEPTION

IS Should Be Outsourced

In his January 2000 report, "The Death of IT,"



in e-business

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Forrester Research Principal Analyst Bobby Cameron argues that the e-business demands for IT scalability, reliability, ubiquity and quick change will tax IS organizations beyond their capacities, forcing greater reliance on external technology providers. Gartner predicts that by 2003, 75 percent of IS organizations will shift away from providing IT services to brokering them from vendors.

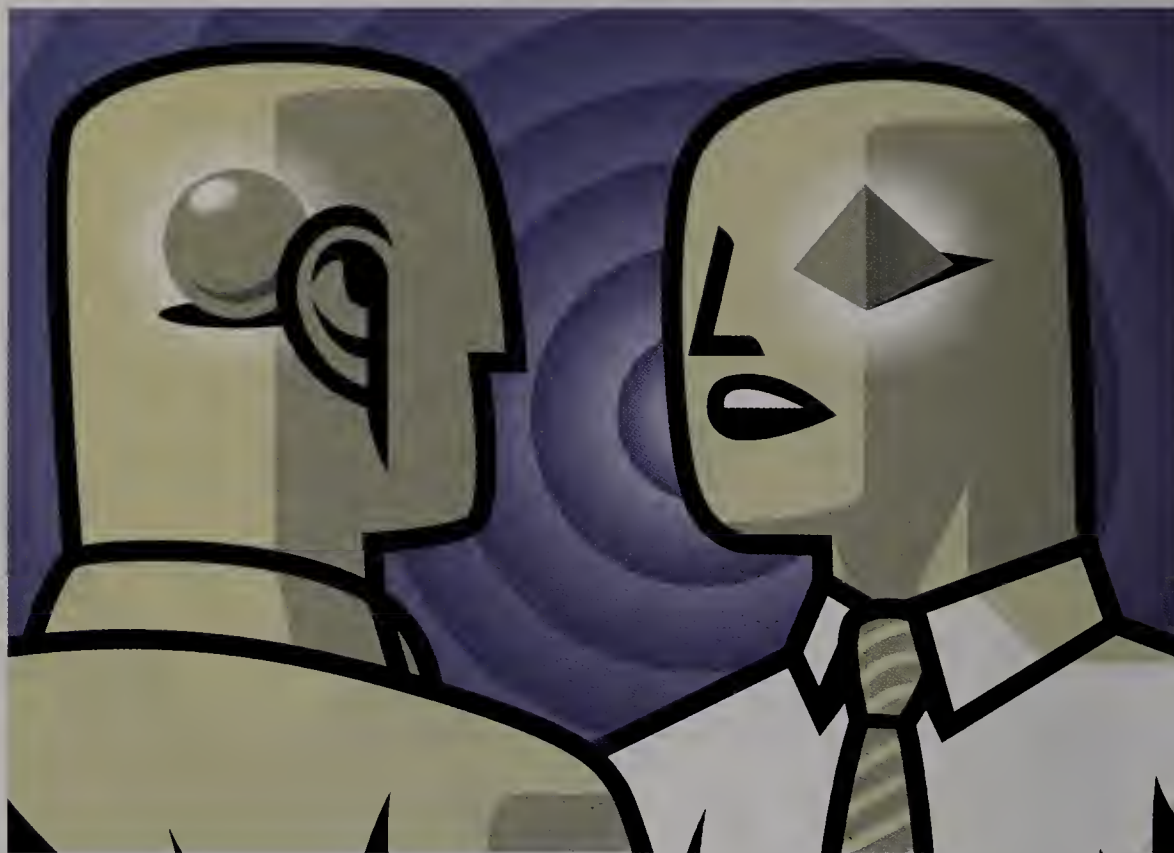
The problem with outsourcing is that the business often perceives that everything needs to go, not just what makes sense. CIOs are now having to prove what should remain rather than selecting what should go. To avoid a possible outsourcing disaster and real damage to the company, IS needs to address this perception head-on—before the CFO begins meeting with Andersen Consulting or EDS or CSC.

PERCEPTION

ERP and Y2K Cost Too Much

CIOs look at Y2K as the big bomb they helped defuse, and mostly they're right. CEOs and CFOs—many of them, at least—wonder why they spent so much money and man-hours on a problem that IS created in the first place. As for ERP, many business executives still wonder when they're going to get some bang for the bucks they poured into these back-end systems that suddenly are incompatible with many e-commerce operations. "ERP was supposed to be the silver bullet," says Compass's Smith. "Instead, it ended up over budget, over deadline and created a level of skepticism [among business executives]."

Then consider Y2K—a project that diverted talent, time and money for years—and you can see how Gartner reached its conclusion that business executives will be exercising a lot more say about IT decisions going forward. "Priority lists will change materially, as will the people who set those priorities," Gartner says in its late 1999 "IT Management Scenario" report. "The backlash to year 2000 overspending will compel business executives and department managers to assume ownership of IT-related business initiatives and benefits."



A Classic Disconnect

Sometimes not even the biggest, baddest network is enough to bridge the communication gap between CIOs and their bosses

You've seen the cartoons about "what you say to your dog" and "what your dog hears"? Well, the relationship between CIOs and the CEOs (or COOs or CFOs) who manage them isn't much better. Characterized by the CIO's perceptions of what IT brings to the corporate table versus the bottom-line realities that catch the CEO's attention, this disconnected relationship makes for some good laughs (see examples below). But the sober truth is that if CIOs want to raise IS's profile and influence, then they've got to invest some time and energy in bridging this communication gap.

What the CIO says: "We successfully completed our ERP rollout."

What the CEO hears: "We just spent three years and \$10 million forcing the company to adopt a new business process system that the Internet might make irrelevant."

CIO says: "We got through Y2K without a hitch."

CEO hears: "We just spent another three years and another \$10 million squashing a harmless computer bug of our own creation."

CIO says: "I'd like to implement an aggressive upgrade/replacement schedule for our desktop systems."

CEO hears: "I'm blowing my budget because I really, really want some new toys!"

CIO says: "We're taking a new project management approach to our work."

CEO hears: "We're hoping to predict when our projects will be over budget and over deadline rather than explain them after the fact."

—T. Field

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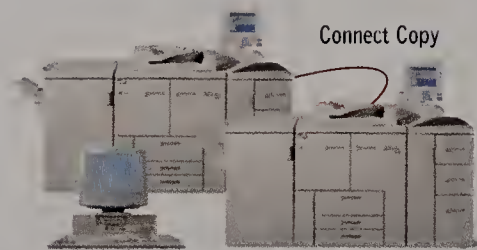
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PERCEPTION

IS Can't Lead E-Business Efforts

OK, so it's an unfair generalization, but how else do you explain the number of companies that have established separate e-biz units outside IS, under the aegis of marketing or finance? Since the dawn of e-commerce, IS groups have been content to maintain the engines while other business groups have steered the bus. This passive role has convinced some business leaders that IS groups simply aren't capable of even having a hand on the steering wheel. The problem, says Reg Foster, chief e-business officer of American Management Systems, is that CIOs have never before wielded the kind of business-changing influence the Internet now gives them. "It has never been the CIO's role to go to the strategic business head and 'destroy' the business," Foster says. And unfortunately, if IS doesn't step up and assume this role, then some other group will. "Once the executive office wakes up and smells the coffee, they're appointing someone with business, technology and vision skills to define where to go next and drive the initiative," Foster says. "If I were a CIO, I'd be looking at why this new e-commerce position is end-running the CIO."

PERCEPTION

Most IS Leaders Are Technology Tacticians, Not Strategists

Businesspeople are worried that their CIOs will not be able to lead them through the thicket of electronic commerce and its automated business processes. This fear is revealing itself in the explosion of new titles for senior IS executives. The title war is relevant only in that it reveals a desperation on the part of businesspeople to separate the tacticians from the strategists.

Indeed, no one can even keep track of what the titles mean. In traditional organizations, the CIO is the technology visionary who makes strategic decisions about how

the company will deliver its goods and services electronically. The CTO is the first lieutenant, conversant with architecture, data models and emerging technologies but maybe not so smooth in the boardroom or in people management. At the dotcoms, the roles are often combined or even reversed (for more on the CTO role, see "The Wolf at the Door," *CIO*, May 15, 2000).

Despite all the hype about titles, there is

tems. Outsourcing introduced CIOs to the idea that some IS tasks really can be performed better by service vendors. The shared services movement reintroduced the central IS group concept but with a twist: IS departments now charged users for their work and subsequently were held to a higher standard of delivery and performance. ERP software brought businesspeople into key project leadership positions on implementation teams.

"If I were a CIO, I'd be looking at why this new e-commerce position is end-running the CIO."

—Reg Foster, American Management Systems

a valid concern. Can one person manage the boxes and plot the company's technology future, or do you need two people? CIOs are going to have to answer this question or the business will answer it for them.

Today, amid the uncertainty of how e-commerce is going to shake out for traditional businesses and Internet startups alike, IS is especially vulnerable to hard business realities. Except this time, unlike the past, there isn't a single force of change, or even a series to be dealt with individually. Rather, IS faces several concurrent realities that could indeed prove to be a lethal combination.

REALITY

Technology Independence Has Been Building for Years

The reins of technology spending and control have been slipping from IS's grasp very slowly—almost imperceptibly—over the years. But now these subtle changes are snowballing into something that calls IS's technology leadership role into question.

Decentralization brought IT out of the basement and into the business units, where users have become increasingly more comfortable with—and controlling of—their sys-

These so-called super users have come to understand the company's back-office ERP systems as well as anyone from IS.

If IS is to survive as an independent entity, it needs to keep these new business and technology experts happy, providing them with advice, support and project management help so that they—not IS—can lead technology implementation projects.

REALITY

E-Business Forces IS to Connect with the World

E-business has thrown open the doors of IS's data centers to the outside world. IS is still rubbing its collective eyes and adjusting to all that new light. Suddenly, systems that were designed to talk only to a closed, secure internal network and a select set of homegrown applications now have to turn and face the Internet, and customers' and suppliers' legacy systems and applications too.

In the past, IS could simply roll up its sleeves and learn about new technologies. But there's a difference to all this e-work that we haven't seen before. It is all intimately tied in with the business processes of the company. IS can't develop these technologies



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When non-IS leaders run e-business, the old IS group will die, says AppNet Executive Vice President **John Cross**.

REALITY

Businesspeople Will Manage an Increasing Portion of IS

John Cross, former CIO at BP Amoco and now executive vice president of strategy consulting at AppNet, a Bethesda, Md.-based e-business consultancy, sees increasing numbers of business units taking over IT tasks—and it's a painful transition for many IS groups. "Some [IS groups] retain ownership of their old roles, some refocus entirely on e-business, and in some cases a new [non-IS] guy is brought in to head the e-business agenda," Cross says.

When the non-IS leaders are brought in, that's when IS should worry. "Those IS organizations will simply die," Cross says. "Business simply goes right around them and takes control of IT. You see some business heads [in these enterprises] actually creating their own IT strategies."

REALITY

Outsourcing—in Some Form—Is Inevitable

Business processes come in a box these days, and so do most of the routine services an IS organization can provide, such as help desk

support and network management. Companies are now trying to discern their IT differentiators—the technology-driven processes or services that give them competitive advantage—and then outsource the rest. IT outsourcing is a \$100 billion industry that is expected to swell to \$151 billion by 2003 (not including the ASP market, which will grow to \$7 billion by the end of 2001), according to market researcher IDC.

The outsourcing coup d'état has been predicted for years, but only recently have outsourcing vendors had the capabilities and the experience necessary to make it so. EDS, Andersen Consulting, CSC and the other full-service outsourcers have—after roughly 10 years of painful trial and error—proved they can run a customer's entire IT operation, and the smaller boutique vendors certainly can handle discrete aspects. Application service providers threaten to pull away whatever the boutiques and the big outsourcers don't take—in most cases that means application development, IS's traditional crown jewel of value to the business.

John Reese, former technology vice president of IT at Time Warner, now CEO of John C. Reese & Associates, a New York City-based IT consultancy, argues that e-commerce pressures are too great for most

The Same Old Song and Dance

When it comes to predicting the end of IS, only the years change

British comedian Benny Hill once said, "Live every day like it's your last; someday you'll be right." He could have been an IT analyst. Every few years, a new analyst appears with a new report of old news: the impending demise of IS. Here are samples from three of the most noteworthy predictions.

1987: MIT's *Sloan Management Review* publishes "The Withering Away of the IT Organization" by John Dearden, an accounting professor who posits that "...IS departments as they are currently constituted will be dismantled. Independent software specialists will dominate the development of systems, programming and other software. Users will completely control individual information systems."

1990: A *Harvard Business Review* piece by CIO Hall of Famer

Max Hopper describes a not-too-distant time when "information systems will be thought of more like electricity or the telephone network than as a decisive source of organizational advantage." In this new world, Hopper writes, the announcement of a new CIO "will seem as anachronistic as a company today naming a new vice president for water and gas."

2000: In a Forrester Research report entitled "The Death of IT," Principal Analyst Bobby Cameron calls e-business the final nail in IS's coffin. "...the demands of e-business create a technology management gap that IT can't bridge," Cameron writes. "Separated from business process teams and isolated from external constituents and technology sources, the IS organization as we know it will die."

—T. Field

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IS organizations to meet everybody's needs internally. "As companies go out onto the Internet, it's going to be impossible to manage everything from a single site serving everybody," Reese says. "Anything viewed as strategic and proprietary will be kept inside. But as long as [IS] can get more reliable and responsive service on the outside, then [they] have to explore those options."

REALITY

IS Can't Find—or Keep—Good Help

With roughly 850,000 IT jobs currently open and at least 1.6 million new jobs expected to be created by mid-2001, it's safe to say the IS staffing crunch won't ease anytime soon. Increasingly frustrated by their inability to obtain and retain qualified IS staff, companies are forced to farm out more work to contractors, consultants or outsourcing vendors.

Frankly, the vendors and consultants struggle to fill their open positions too, but they do have the advantage of offering IS employees more opportunities to work with new technologies and a variety of different companies as well as the knowledge that IS is the core business of the company, rather than a peripheral service and a cost drain. As the staffing crunch continues, Gartner estimates that by 2003, 60 percent of large companies will farm out 50 percent of their IT activities to contractors, not just because of the lack of qualified IS staff but also the sheer volume increase of IT work, as well as the likelihood that business users will assume greater responsibility for traditional IT tasks.

Complicating the staffing problem is that IS organizations don't just need people with the hot Net IT skills—Web development, systems integration and project management. They have an equally crying need for people with good business knowledge and interpersonal skills. It all adds up to the CIO's staffing quandary, says John J. Brighton, CIO of Aetna in New York City. "The necessary skill sets have shifted to where we have to have people who can com-

municate at any level with [business] people of any level," Brighton says. "Communication skills definitely have to be better."

The good news is that business and communication skills are easier to find than Java programming and Web design skills. The bad news is that the competition for these soft skills is a whole lot greater.

Sifting through the various perceptions and realities, it's clear that IS faces forces of change from all sides—from management, from the users, from the marketplace and even from technology itself. With so many forces in motion, retreat isn't an option. IS can't hide. The options are to run and keep pace with the changes, or get run over by them.



*There is no career crisis for CIOs "except for the one we always have: competence," says Orama Partners Managing Director **Charles Popper**.*

Charles Popper, former CIO of Merck & Co. and current managing director and chief technologist at Orama Partners, a New York City-based e-commerce consultancy, says the IS future sits squarely on the shoulders of the CIO. "It's a test; it's up to the CIOs to prove themselves," Popper says. And, frankly, he thinks the good CIOs are up to the task. "I don't see it as a career crisis at all for the CIO, except for the crisis we always have: competence." **CIO**

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SUDDENLY I.T. IS THE LEAST OF THE I.T. EXECUTIVE'S CONCERNS. Relationship management, business partnership, sourcing strategies, visionary leadership—these are the highest priorities for CIOs trying to steer IS successfully through the sea change created by e-commerce. “IT knowledge is almost a liability,” says Michael Gerrard, a Gartner Group research director focused on CIO and IS issues. “What’s more important now is an ability for CIOs to develop a sense of strategy and to implement sourcing solutions.”

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Other analysts and research organizations have studied the forces of change affecting IS and reached similar conclusions. Business owners and external vendors will assume more control over traditional IS tasks. Where contention remains, however, is over the fate of the CIO. Some see the CIO role diminishing to pure IT procurement; Gartner's Gerrard still sees a bright future for the smart CIO. "I don't see the richer CIO roles being significantly usurped by an outside entity," Gerrard says. "I see CIOs becoming much more business visionaries and technology opportunists."

To avoid becoming procurement managers, CIOs have to change their IS management practices. In observing companies that have redirected their IS organizations, we see many common strategies for success.

CIOs Must Become Vendor Managers

Even Bobby Cameron, the Forrester Research principal analyst who predicts "The Death of IT," sees a bright future for the IS leaders who have proven vendor management and partnership skills. IS executives must first recognize that they do possess valuable vendor management skills gained during their years of work with consultants, software and hardware companies, and other external providers. CIOs need to take these skills and make them broader and deeper, going from buying software applications to buying functionality from ASPs, vertical industry portals and other software service providers; from buying boxes to buying hosting services; from "renting bodies" to hiring consultants who help set technology strategy.

These IS people—catalytic CIOs, Cameron calls them—can survive any outsourcing initiative by proving their ability to manage external relationships. In fact, in an e-business environment where partnerships are everything, relationship management becomes one of the key corporate competencies, and the IS executive who possesses these skills can ride them into new roles as general managers or COOs. "Not every CIO



is prepared to step into these new roles—to have these new thoughts and conversations about new ways of doing business," Cameron says. "These people face a huge hurdle." But for those IS leaders who can clear the hurdle, the track ahead is wide open.

President Al Weiss recently hired a new CIO for information technology, former Campbell's Soup CIO and Senior Vice President of IS Roger Berry, in part for his proven ability to forge partnerships. "Historically, we would have gone after someone with a background in IT and various systems," Weiss says. "This time we knew the leader had to have technology skills but also an ability to partner across our complicated corporate organization."

In Berry, Weiss found an IS leader with multiple industry experience (he worked at Tenneco before Campbell's) and a track record developing internal and external partnerships. The latter skill will be especially important as Disney, which traditionally has kept all IS functions in-house, follows Weiss's mandate to explore outsourcing. "In the past, there have not been a lot of [external] systems solutions that could meet all our needs, but now there are real-world solutions coming down the pike," Weiss says. "We're going to leverage the talent out there in the world."

Focus on Strategy, Not Tactics

CIOs content to focus on network uptime and PC upgrades are doomed to be replaced or superseded by someone the business views as a strategic leader of technology. This isn't just about outsourcing (although outsource-

"I'm the facilitator, the negotiator, the bridge between business senior managers and vendors."

—Aetna CIO John Brighton

And while the dotcoms get most of the credit for leveraging multiple partnerships, even some of the traditional enterprises are changing their partnership strategies. At the Walt Disney World Resort in Lake Buena Vista, Fla., where the IS group has traditionally kept a tight rein on all things IT,

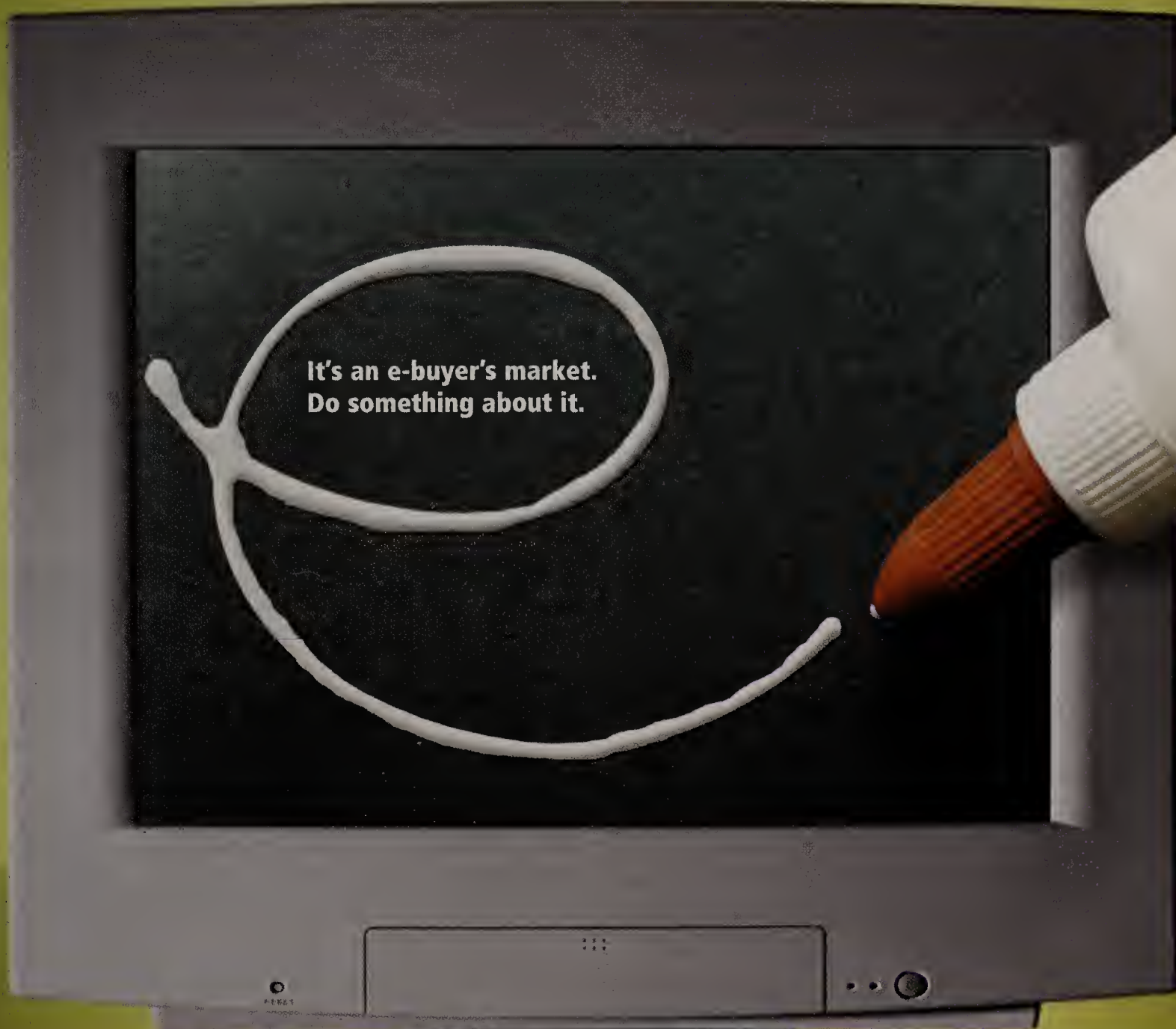
ing is a component of shifting IS's emphasis to the strategic); CIOs must become strategic tutors to the other Os in the business.

As businesspeople take on increasing levels of responsibility for technology, they can always use IS's advice on purchases and partnerships. To leverage this position of

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"most favored counsel," CIOs must develop their relationship management skills—work with the business users to help them understand technology and the cultures and contracts of the external suppliers that will increasingly provide that technology to the business. "It's almost a consultative role," says Alastair Robertson, leader of Andersen Consulting's Leadership Development Practice Area.

Robertson has studied in-depth the evolving role of executive leadership, and he identifies a growing opportunity for CIOs to teach business leaders the possibilities of IT. "If CEOs don't understand IT, then they will shy away from it," Robertson says. "You'll

see CEOs calling on their CIOs to play more of a partnership role and stretch the range of the CIO's skills." Rather than a career setback, this move could be a significant step toward a COO or even a CEO role.

At New York City's Aetna, where IS and the business side are collaborating to fulfill the company's e-health initiative, CIO John Brighton has already embraced the role of relationship manager for his colleagues. "I'm the facilitator, the negotiator, the bridge between business senior managers and vendors," Brighton says. But he's not the only person in his company who understands IT—that's a new reality for the catalytic CIO. Business users are smarter and more demand-

ing than ever of their IT suppliers. "It used to be that businesspeople didn't care what technology they sat on so long as it worked," Brighton says. "Today they know the difference between Java and Cobol." They also know the difference between real vendor management and someone who's faking it.

Make Outsourcing the First Option

Smart CIOs operate with the confidence that not everything should or will be outsourced, but they also have the resolve to outsource everything they can. Marty Lippert, CIO of the Toronto-based Royal Bank of Canada (which owns the Security

Death Defining

Forrester's maverick analyst explains his prediction of IS's demise

First of all, Bobby Cameron never actually says the IS organization is going to die. Yes, the Forrester Research principal analyst's January 2000 report is entitled "The Death of IT," and certainly Cameron raises several legitimate concerns about the future of the IS group. But, no, he never really says IS is going away—just that it's going to play a far different, lesser role in e-businesses of the future. *CIO* asked Cameron about his forecasts and the reactions they've received.

CIO: What do you mean when you say IS will die?

Cameron: The IS organization may stay on as a specialist group in companies that need a savvy procurement person for IS...but as the owner of all things high-tech, the IS organization is going to go away.

CIO: Other people have made similar "IS is dead" predictions before. What's different about yours?

Cameron: Before, people assumed that there would always be a separate business unit managing technology. I'm saying that, as a logical extension of the move of technology into the business units, the presumption that it's a good thing to have technology [management] inside [a company] shifts. Now the idea is that if you can acquire this technology outside the company, then that's a good thing.

CIO: You say companies will buy their IT systems and services externally. What will they retain in-house?

Cameron: They'll keep a CIO equivalent, someone who will own nothing but research—no applications development or

operations responsibilities. Companies will retain IT skill sets only to do things that are related to competitive advantage or can't be found outside the company.

CIO: What have been the reactions to your report?

Cameron: Confusion. Anytime you've got a large organization like IS, it's hard for people to be able to see it ever going away. But the topic is shining light on how the technology management environment exists today. CEOs and CFOs are much more inclined to have this conversation than CIOs are. The CIOs are the most confused. They were hired to be control freaks; now they're faced with driving business change. It's a huge problem for them.

CIO: How will CIOs run IS in the future?

Cameron: The smart IS manager will restructure the IS organization by process, push as much as possible outside and prepare the enterprise for the transference of IT capabilities to process owners. The right [CIOs] are leading that change; the wrong ones are worrying about it. —T. Field



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First Network Bank), is constantly looking for new opportunities to outsource internal IS functions. He's already outsourced credit card processing and some application development, for instance, and he's looking for new opportunities to save costs and improve IT efficiency. But Lippert also realizes that there are some tasks that can't be outsourced. "I look at 100 million lines of legacy code running on our embedded systems, and at this point, at least, that would be difficult to outsource," Lippert says.

Rather than viewing outsourcing as a threat to marginalize the IS contribution, Lippert looks at the practice as a means of distinguishing IS for its ability to choose partners and manage relationships—highly desirable skills in the new economy. "We're continually active in increasing the number of partnerships and alliances we enter into with third parties," Lippert says. "As we add more and more third parties into the IS mix, the degree of complexity increases as well. That trend further suggests a need for a strong and focused IS group to manage that environment."

CIOs should see outsourcing not as a threat but as an opportunity to enhance IS's impact, says Charles Popper, former CIO of Merck & Co. and now managing director and chief technologist at Orama Partners, a New York City-based e-commerce consultancy. "The role of the CIO is to get the work done regardless of who does it," Popper says. "I never cared whether I was



Lure New Staff with Unique Offerings

Contrary to popular opinion, not every skilled IS worker wants to sell his or her soul for stock options. Some talented—yes, even some young—technology people still prefer the sane hours, financial stability and solid benefits of a traditional corporation. But the work has to be important, something that will set the company

differentiating Web and electronic commerce functionality, or setting people loose on really challenging integration efforts—linking the back-office systems to the website so that the company can do electronic commerce, for example. "There's still a huge integration job to be done in enterprises," says Rich Brennen, managing director of the IT practice at Spencer Stuart, a Chicago-based executive recruiting company. "That's what distinguishes your IS people from the company down the street: You can outsource components of technology, but the integration of those components can't be outsourced."

Royal Bank of Canada's Lippert is adding people to his electronic commerce team as quickly as he is outsourcing functions that primarily require maintenance and support. He's hiring IS talent skilled in such hot technologies as Java programming, Internet development and TCP/IP networking. These are the people who are building the e-commerce systems that Royal Bank will retain

"The role of the CIO is to get the work done regardless of who does it."

—Orama Partners Managing Director Charles Popper

buying [the services] internally or externally. There were requirements and standards, and I held people's feet to the fire to make sure the work got done."

apart from its competitors, or something that fills a vital need that no outsourcer, consultant or ASP can provide. That means focusing development efforts on

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as competitive differentiators. Everything else, as far as Lippert is concerned, is on the table to be outsourced if the right opportunity arises.

Work with the Business—not Against It—to Manage IT

At Sony Electronics in Park Ridge, N.J., CIO William Gauld finds himself inside a tradi-

tional enterprise that's trying to become an e-business. There's already a separate e-solutions team—the business-driven, IS-supported group that's focused on creating Sony's Internet presence—while Gauld's IS group concentrates on infrastructure, data management and application development. Gauld foresees a not-so-distant future, though, when the business process owners will take control of the applications. "Once we get to the point where traditional apps are replaced with workflow software, then the businesses will take over significant aspects of the IS group's application development role," Gauld says, believing the next generation of apps will be more plug-and-play than the current. "I think we're a ways away from that," yet headed in that direction nonetheless.

To prepare for this divestiture, Gauld is focused increasingly on driving business process improvement. What new technolo-

Make a Name for Yourself

Call the top IS position anything you want—CIO, CTO, C3PO—the bottom line is that businesses will continue to need a senior-level IT person to drive strategic technology initiatives. That position isn't going to go away, no matter what you call it.

But it would be naive to think this title debate doesn't complicate things for the IS executive. The CTO title especially has created a lot of buzz (see "The Wolf at the Door," CIO, May 15, 2000). Companies suddenly are creating CTO positions, CIOs are transitioning into them, and some executive recruiters are even changing the names of their practices to reflect the market buzz about CTOs. Phil Schneidermeyer, a senior recruiter for Korn/Ferry International, used to be known as the head of the recruiting company's CIO practice, but now he calls himself the Technology Officer Practice



Royal Bank of Canada CIO **Marty Lippert** is adding people to his electronic commerce team as quickly as he is outsourcing functions that primarily require maintenance and support.

The next generation of apps will allow the business to "take over significant aspects of the IS group's role."

—Sony Electronics CIO William Gauld

gies or partners could be leveraged to improve procurement or fulfillment? Some IS personnel now are assigned to work in the business units and vice versa in cross-business partnerships aimed at making the technologists more process-aware and the businesspeople better IT vendor managers. "We have to move quickly to help the business sort out what technologies are appropriate for us and what would just be nice to have," Gauld says. "It can be mind-boggling. We've got to help them understand what's relevant, what's not, and then we've got to create the infrastructure that allows us to evolve as a business quickly. It's not for the faint of heart."

Leader. "I'm filling more CTO positions now than CIO jobs," Schneidermeyer says. CTOs are what his clients demand, in some cases no doubt just because the title is hot.

Clearly, career decisions are being affected by people's definition of these roles. But two important points for IS executives to focus on are, What kind of leader do you want to be? and How will you define and market yourself? After all, the names might change, but the IS executive's job remains the same, and the business and technology demands will only increase—that's the one point upon which everyone agrees. "Companies want it all," Schneidermeyer says. "They absolutely want it all." **CIO**

PHOTO BY PATRICK NICHOLS



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WOULD BE UNFAIR TO SAY THAT ALL I.S. GROUPS HAVE simply stuck their heads in the sand and ignored the e-business changes swirling around them. In fact, as we researched this special report, we found several companies that have started to adapt—or at least have anticipated the need to adapt—to new IS demands. In some cases, new leaders



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have been brought in to drive change; in others, veteran CIOs have thrown out their old game plans and started fresh. Some of the companies are traditional brick-and-mortar enterprises trying to adapt to e-commerce; others are high-tech vendors or Internet startups that are struggling to manage their own growth.

Among these progressive companies, profiled below, are The Mony Group, which turned an outsourcing disaster into a reengineering success story; EDS and 3Com, a pair of IT vendors whose CIOs have reshaped IS because of e-commerce; and Drinks.com, a brand-new Internet startup whose IS leader wears both the CIO and CTO hats as he strives to bring some traditional IS and business sense to a nontraditional business.

Mony: Starting Over

As CIO of The Mony Group based in New York City, E.P. Rogers in 1994 outsourced his entire 390-member IT department to CSC in a seven-year deal valued at \$210 million. The goal was to upgrade Mony's antiquated IT systems and prepare the company for e-commerce. But the result was disaster. Two years after inking the deal, it blew up over conflicts about cost and scope. Rogers sent CSC packing and rebuilt Mony's internal IS group. Subsequently, the Mony story became notorious as the cautionary outsourcing tale.

But what's little known is that in the wake of this disaster, Rogers hasn't just rebuilt IS; he's completely redefined it—and his own—role at Mony.

Mony's success story begins at the end of the disaster. When the outsourcing smoke cleared at Mony's IT center in Syracuse, N.Y., Rogers had 240 IT workers left from the CSC transition. He offered jobs to them all, and 92 percent returned. That left him with 115 jobs to fill, "And they had to be

the best," Rogers says. You see, in the outsourcing interim, Mony's business changed to embrace the Internet. "The edict came down: If it's not Web-based, it must be Web-enabled," Rogers recalls, and so he had to recruit IS workers who possessed the hot new Internet skills. "But we found it was not just technical skill sets we were looking for," he says. "We needed people who were

wired differently, who had a different expectation about how to do things." He needed people with business, Web and project management skills who could think, work and change course fast.

Ultimately, Rogers ended up infusing his IS group with a youth movement—scores of staffers recruited from upstate New York schools via job fairs, billboards and movie



"The edict came down: If it's not Web-based, it must be Web-enabled," recalls Mony Group CIO E.P. Rogers.

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screen advertisements. "We did a lot of little things to recruit people," Rogers says. "It was not a conscious thing to go after young people, but people are wired differently coming out of school today. Their performance forces other people to think differently. [Veterans] can't help but love their energy and the way they get things done."

Since adding these new people and skills,

where suddenly he found himself on the radar screen of all his business peers. "People started seeing me, getting to know me and saying, 'You need to be involved in this...'" Rogers says. "When you're there for those early discussions, that's when you really start making a difference. That's when you start to develop a partnership focused on results."

Since connecting with the business side,

"I used to spend 90 percent of my time on IT stuff. Today I probably spend 80 percent of my time on corporate business projects."

—Mony Group's E.P. Rogers

Rogers' IS group has upgraded Mony's technology infrastructure, built the company's website and improved its relationship management skills to work more effectively with business partners and vendors. The latter change required soft skills training, as well as recruiting people who possess some of the project management skills necessary to negotiate work across functional, geographic and IS boundaries. Reporting relationships have changed too. IS is still a centralized unit reporting directly to Rogers, but IS employees are deployed throughout the company's business units and are working under dotted-line reporting relationships with business executives.

Rogers is even willing to outsource selectively, but he'd never again turn over everything to external vendors. "That whole outsourcing situation was an executive MBA program in what not to do," Rogers says. Outside IS, Rogers' business peers can't help but notice how he now approaches work differently. In the old days, pre-outsourcing, Rogers pretty much minded his own business up in Syracuse. But during the outsourcing debacle, he started spending more time at corporate HQ in New York City,

Rogers has partnered with the marketing and distribution departments to refine Mony's Internet presence, and he's established a place for IS at the boardroom table when prospective mergers and acquisitions are discussed. Through his outsourcing experience, he's helped IS acquire vendor management skills that benefit the entire company.

Clearly, Rogers' role as CIO has changed. "I used to spend 90 percent of my time on IT stuff," he says. "Today I probably spend 80 percent of my time on corporate business projects." Similarly, with new technologies, new skills and a more collaborative style, IS has evolved into an organization much more attuned to the business. "IS has become more vibrant," Rogers says. "We used to be in the back office, but now we're out front making a difference every day."

3Com and EDS: Walking the Talk

We frequently ignore the IT vendors—dismiss them as disconnected from the market pressures and changes that affect their customers. Yet at two of the best-known IT product and service vendors, 3Com and EDS, the IS orga-

nizations are prime examples of "early adapters"—IS groups that faced the forces of change early and whose senior leadership responded by reorganizing and refocusing their IS strategies and personnel.

Everything has changed at 3Com Corp. One of the pioneers in computer networking services, the Santa Clara, Calif.-based vendor recently divested portions of its businesses (for example, Palm Inc., the manufacturer of Palm devices) to refocus entirely on the small-to-midsize networking market, products for consumers and network service providers. Internally, 3Com has reorganized to focus almost entirely on its network and the Internet as the means to conduct and create new business.

How do these changes affect IS? The CIO role is essentially split. CTO John Hart, a veteran 3Com leader, heads the group developing new, emerging technologies for 3Com to develop as products, while new CIO David Starr, formerly CIO of Knight-Ridder, finds himself reshaping the traditional IS organization—and his own role—to improve the company's own operations. "Before, the CIO role was more maintenance and development, but now it's more of a business partnership role," Starr says. "It's a different kind of animal."

Like most companies, 3Com used to have a do-it-all IS organization: application development, desktop support and network management. Today, the desktops are outsourced, data centers are headed that way, and the network is everything—virtually the only thing—for Starr's internal IS group. In a decentralized environment necessitated by 3Com's global presence, many of Starr's 750 IT staffers are assigned to work in business units, reporting at least indirectly to business heads, taking a lot of day-to-day control out of Starr's hands. This collocation puts business skills at a premium in Starr's group.

And while Starr has given up some aspects of traditional IS management, he maintains a tight grasp of IT resources. His top priority is deploying a new Web-based e-commerce infrastructure as well as upgrading 3Com's global voice, video and data network. These

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are IT systems that touch and in part are owned by every one of 3Com's business divisions, yet Starr doesn't foresee a time when these units will take over day-to-day control of the systems. "The company can't afford to have the individual business units in control of [these systems]," Starr says. "We just wouldn't be able to take advantage of scale, power or speed that way."

On the surface, coexisting with a CTO and giving up many traditional IS tasks and management, Starr's role appears to have been curtailed. But in fact it has grown—just in different directions. Soon after he was hired, Starr was appointed to head 3Com's most critical e-commerce resource: network security. This role not only gives him greater visibility inside the company, it has also propelled him to a national stage as a participant among a select public and private Internet security advisory group recently chartered by President Clinton. "The network is everything," Starr says. "As more eggs get put into the basket, the basket has to be more bulletproof." And at 3Com, at least, no one can protect that basket better than the IS group that built it.

At EDS, the Plano, Texas, IT services company founded by H. Ross Perot, the corporate IS organization has evolved to look more like, well, EDS. Before the arrival of new CIO Terry Milholland, formerly CIO at The Boeing Co., the EDS army of IT experts didn't serve themselves quite as fully as they

more like a consulting company. The IS staff, formerly arranged by function (infrastructure, data center, etc.), is now broken down into

of the group's contribution.

Now, IT chargebacks that have been a source of controversy when introduced in many organizations—"Why should we pay for our own services?" critics argue—Milholland sees as a natural extension of the approach EDS specialists already take when serving their external clients. "I see it more as an evolution of roles, not a revolution," Milholland says. In other words, EDS professionals possess these skills; they just have to start using them internally as well as externally. The plus for Milholland is that through chargebacks he's now able to show an exact financial return on the company's internal IT investment.

In trying to act more like an e-business, the EDS IS group has had to refocus its energies and rev up its speed of delivery.

"There are higher expectations from business leaders. We've got to react in days, not months."

—EDS CIO Terry Milholland

did their customers. "We suffered from some of the 'shoemaker's son' issues before," says Milholland. "All of our focus had been external; we didn't treat ourselves like we do a client." But since Milholland's arrival last fall, he has reorganized IS so that it looks and acts

business process groups that sell their services to their internal clients—just like EDS sells its outsourcing skills to external customers. With this new model, IS is more flexible and responsive to customer needs, Milholland says, and he is able to demonstrate tangible evidence



Though IS has moved people into the business units at 3Com, the company can't afford to decentralize the network, says CIO David Starr.



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Now, rather than operate as a discrete group on specific technologies or solutions, the 50,000 IS engineers are spread throughout the enterprise, helping develop new Web-enabled knowledge and data management services for internal and external use. The challenge for IS, Milholland says, is to provide these services fast. "There are

higher expectations from business leaders," Milholland says. "We've got to react in days rather than months. A normal systems-development life cycle to build a new website won't cut it, and a lot of IS people aren't comfortable with that; it's a different discipline."

Milholland's task is twofold: to hire the

business-minded IS staff who can thrive in a faster, more flexible environment, and to change his own focus from internal technology to external business issues. How can knowledge and data be used for competitive advantage? What metric can EDS develop to help clients determine the value of IT in a merger or acquisition? How can companies account for (and report to their regulators) such invisible assets as intellectual capital? The more capable his IS group is in dealing with these questions, Milholland says, the more influence it will wield for EDS and its customers.

Drinks.com: Wearing Two Hats

Drinks.com is the classic Internet startup. Based in Lake Bluff, Ill., this new company aspires to be the Amazon.com of liquor—the Web portal where businesses and consumers go to learn about and purchase beer, wine and spirits. Since January, Drinks.com has begun selling online to five states (California, Florida, Illinois, New Jersey and New York), and by 2001 it's expected to be in 30 states.

Yet unlike many Internet startups, which rely on a CTO to drive technology initiatives and a mix of consultants and outsourcers to manage them, Drinks.com has found someone who can do both. Tom Lebamoff, an ex-Andersen consultant, wears both the CIO and CTO hats at Drinks.com, and he's decided it's more cost-effective for this startup to keep IS in-house and close to the business strategy. "I've seen the consultants and the amount of dollars and stock options they want upfront to do our work," Lebamoff says. "If we hired consultants... we'd end up doubling the size of our IS budget." In fact, when Lebamoff left Andersen to join Drinks.com last summer, the company was employing consultants exclusively to run IS. "But no one was managing these guys," Lebamoff says. "We were throwing a shitload of money out the door for application development work we had to bring back and redo."

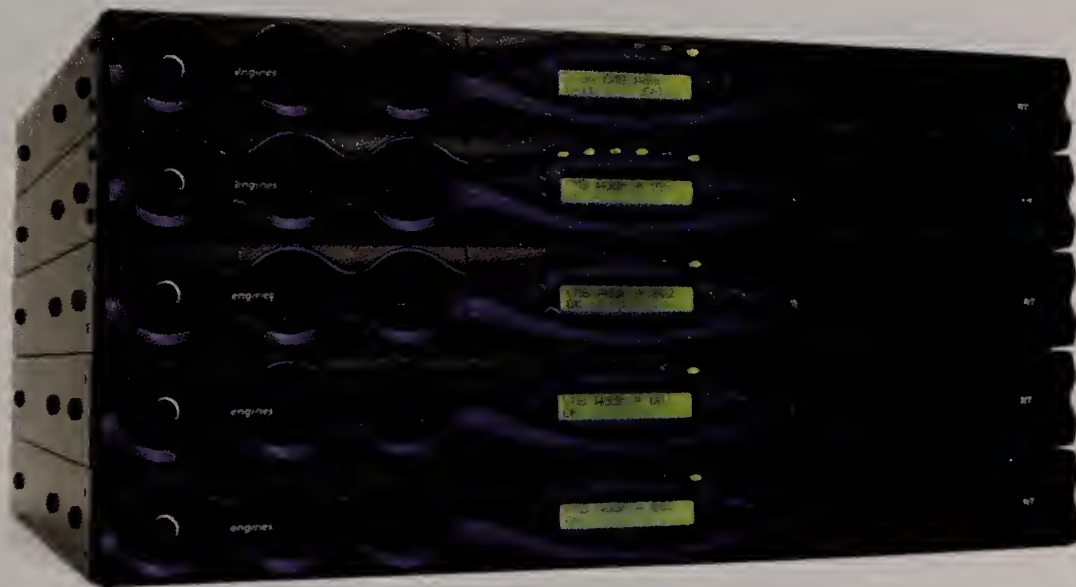
So Lebamoff fired the consultants and then set about carefully building his own IS staff.



Terry Milholland, CIO of EDS, has reorganized IS to look and act like a consulting company.

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Hiring people with business skills means “the business is almost part of IS,” says **Tom Lebamoff**, CIO and CTO at Drinks.com.

He lured 13 other Andersen employees with business and management expertise, and he complemented them with roughly two dozen developers and programmers to build Drinks.com’s network and database.

But even though his organization has a traditional structure, Lebamoff hasn’t employed people with traditional IS skills.

Rather than seek technical expertise, he’s sought people with good project management and people skills—forward-thinking folks who are willing and able to partner with their business-side colleagues and put in 70-hour workweeks now in return for a potential payoff if Drinks.com goes public. “It’s almost like having an in-house consult-

ing staff,” Lebamoff says, but with a lot more management and accountability.

Ultimately, the marketplace will decide whether Drinks.com is a successful business, as well as whether the internal IS organization is a successful dotcom strategy. But already Lebamoff believes he’s found the right mix of business and IT skills to make this startup a success. Of the 45 people currently employed by Drinks.com, 32 are in IS. “It’s almost like business is a part of IS,” Lebamoff says. “It’s a brand-new game.” **CIO**

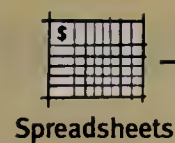
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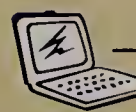
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*IS director Peter Nevitt
is the enemy of all the
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his weapon*

BY ALICE DRAGON

He began his 30-year career in law enforcement as a bobby on the beat in London and once helped track down an IRA bomber. But today, Peter J. Nevitt fights crime on a global scale as director of IS at Interpol.

Despite its reputation, Interpol is not a secret organization of superspies and double agents. Rather, it's a network of 178 member countries whose police forces share leads and cooperate on international criminal investigations. Since 1923, Interpol has been helping the world's law enforcement officers track thieves, terrorists and other assorted thugs and bad guys.

Today, e-mail sent over secure networks has replaced Morse code as a means of information sharing, and Interpol maintains vast databases of wanted criminals, missing persons, organized crime groups, drug seizures, unidentified dead bodies and stolen artwork, to name a few. IT has become such a powerful weapon in the sometimes lengthy and complex pursuit of enemies of the global states that roughly 20 percent of Interpol's annual budget of \$30 million is devoted to IT.

For Nevitt, who says he's long been interested in the application of technology in the police world, serving as Interpol's director of IS is "the ultimate techno-police officer's job." He recently spoke with Senior Editor Alice Dragoon from Interpol's headquarters in Lyon, France.

CIO: Many people who watched *The Man from U.N.C.L.E.* will be surprised to learn that Interpol isn't an international spy organization but actually a network that the world's law enforcement agencies use to share information.

Nevitt: Yes, we're seen as a semimythical organization of super-sleuths. We want to get rid of the myth; we're not interested in it. Well, we like it a little, of course, but the reality is better.

So set us straight: What really happens at Interpol?

We have a network linking 178 countries and the Interpol general secretariat. Through that network, we offer two kinds of services. The first is an e-mail service. Country A sends a message to Country B asking for assistance or cooperation. Country B replies. During 1998, 2.4 million messages went through our network.

We also provide access to an international database of criminal information. So countries use e-mail to send information to the general secretariat, who incorporates it in the interna-

tional database and then makes that database available to every country in the world or to those countries that the owner of the information authorizes.

How do you make information available to some countries but not to others?

We do it by the design of the system, which is based on tables. So if Country X has not been granted access to information from Country Y, and Country X does a search, the system will recognize that this information is denied and Country X won't know it's there.

It's not just a question of diplomatic relationships either. Sometimes it's a question of trust or the need for secrecy among a small group of countries with a specific project. So a message can be one-to-one, one-to-several, one-to-many or one-to-all. And we can also do what we call a "full diffusion" of the message—such as a circulation of a wanted person—from the originating country to every country in the world in five minutes.



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What happens once countries get these messages?

Interpol is an organization of mutual cooperation, so it can't force any action. It's the responsibility of each country within its own national laws to take whatever action is appropriate.

How was information stored and shared at Interpol before the advent of databases and e-mail?

Originally, information was stored in manual files in enormous archives down which clerks used to slide on chairs attached to rails. Not surprisingly, response times for queries were measured in days rather than seconds.

In the early 1980s, member countries communicated to Interpol and to one another through telex, Morse code and HF radio. Interpol also developed its own coded language for radio transmissions.



INTERPOL IS AN ORGANIZATION OF MUTUAL COOPERATION, SO IT CAN'T FORCE ANY ACTION. IT'S THE RESPONSIBILITY OF EACH COUNTRY WITHIN ITS OWN NATIONAL LAWS TO TAKE APPROPRIATE ACTION.

What would a typical message in that code have said?

You could use one word such as "alone," and it would translate as a phrase, such as "Please allow an officer to arrest this man." Or "bakle," which is used to describe a person in detention. It means "He's been placed in detention awaiting trial." I have operators working for me who still use this archaic language.

So how did Interpol move from the days of coded messages and Morse code into the IT era?

We began design of a global telecommunications network in the early '90s. In 1994, we began rolling it out to the world, an X.400 network running over X.25 lines. The rollout was finished only last year. The problem was that only one-quarter of the countries could afford the equipment and the line. So Interpol raised money from its richer members and from other organizations, such as the United Nations, to fund the leased lines, install the equipment and provide training in 130 of its 150 member countries. Interpol was one of the first major global organizations to contract with SITA, which is now Equant NV—a private company created and owned by a consortium of airline companies that collaborated to develop a global network for ticket reservations, air traffic control and so on—to act as network operator and to install and maintain the equipment.

Since the explosion of the Internet, how have you been using the Web?

Like most organizations, we're working out how we adapt to it. At the moment, we're using Internet technologies in three ways. The first is a public relations website. And here we're providing simple, nonsensitive police information—such as information on children or on what we're doing with counterfeit credit cards—directly to the public.

The second is a secure domain of the site where we publish restricted information, which helps investigators do their jobs. For example, using counterfeit credit cards is an international criminal activity. We have developed a technique, not unlike fingerprint identification, that defines the characteristics of a genuine original and of a counterfeit. And we publish that information so that investigators of counterfeit

credit card crimes have a database that they can use as a research tool.

The third way we're using Internet technologies is to replace our X.400 network with a secure IP network.

What do you do to ensure that your databases are secure?

We don't regard ourselves as the world's leading experts on security. The criminal opportunities and the technologies are changing so fast that it's very difficult to stay at the leading edge. So we are a member of the Information Security Forum, a cooperative group of some of the major European companies and government organizations that share expertise on security and develop and apply standards.

How would a police officer go about tapping into Interpol's databases of criminal information?

On a day-to-day basis, hundreds of searches are made of the international databases. Typically, a police officer or a customs officer at a port wants to check on a vehicle, so a search will be made on an Interpol database. As a result of introducing this international database of 2.3 million stolen motor vehicles, hundreds of those vehicles are identified and recovered every year.

Similarly, when police officers are checking individuals and think that there might be an international dimension to the

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check, they will consult the database to see whether they find a “hit” on that person—whether he or she is recorded as wanted in another country. It’s a regular occurrence.

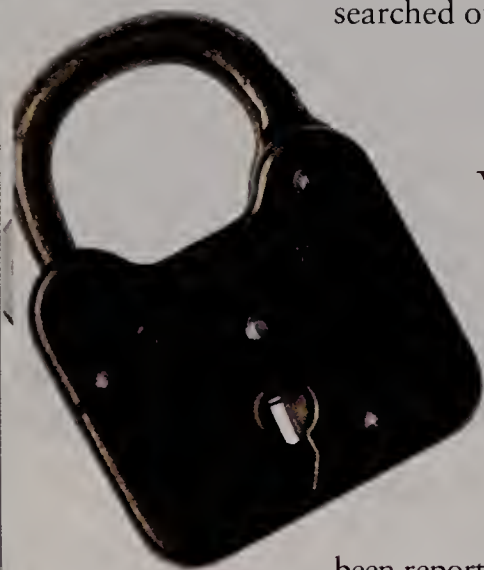
But the most interesting things, of course, are the international multicountry operations that may last for eons and have much more significant results.

Can you describe such an operation?

One that started about two and a half years ago involved heroin smuggled from Thailand in hollowed out books in a series titled “Show Me How.” The investing action began with an inquiry from a U.K. agency asking if we had any records of drug seizures relating to small packages delivered to hotels. We searched our databases and found a few examples that had

Moving from the seamy world of drug smuggling to the rarified air of art museums, doesn’t Interpol also help countries recover stolen artwork?

We’ve got something like 15,000 or 16,000 items in the international database of stolen works of art. To identify a picture as identical to one that is stolen, police officers describe the unique characteristics of the item in lay terms (for example, painting size, internal or external scene, man seated, horse and water). The computer searches and provides pictures that seem to match. It is a very effective approach and requires no artistic expertise or knowledge. We also publish a CD-ROM with this information for national law enforcement agencies and for art dealers. So Christie’s and Sotheby’s and other art dealers have the Interpol database.



WE DON'T REGARD OURSELVES AS THE WORLD'S EXPERTS ON SECURITY. THE CRIMINAL OPPORTUNITIES AND THE TECHNOLOGIES ARE CHANGING SO FAST THAT IT'S DIFFICULT TO STAY AT THE LEADING EDGE.

been reported to us. The examples were mainly in Europe, but all of them had a link to Bangkok—a parcel was posted in Bangkok to a European city close to an international airport, like Heathrow or Frankfurt Airport. That gave the investigator in the U.K. a lead for his inquiry and gave us an indication that this may be part of something bigger.

So we asked every country to search their national records and tell us whether they had examples of similar incidents that they had not reported. And within 24 hours, 50 countries—in Europe, Africa, Central America and North America—said they recently had such seizures.

We called a meeting in Lyon of the investigating officers from as many of these countries as we could get to come to Lyon—because face-to-face they will share information that they may not otherwise provide.

As a result of that, a multicountry operation coordinated by Interpol began to focus on these hotels in different countries. [The investigation led to the discovery of] Nigerian criminal gangs operating out of Bangkok and Bogota, Colombia. And so it was not just heroin from Bangkok, but opium and cocaine from Bogota. During the last two years, a significant number of arrests have been made in various countries on all continents, involving many seizures of heroin and opium. And a very important international gang of drug smugglers has been disrupted.

How would art dealers use that information?

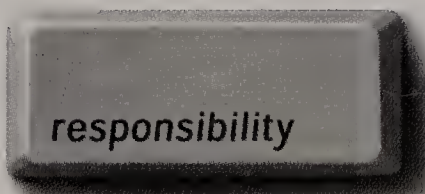
Here's an example: An Italian art dealer went to do business with an art dealer in the United States and had this CD-ROM in his briefcase. The guy in the United States was talking about a bust that he had bought recently. He was very proud of it, and it was going to be auctioned. The Italian art dealer said, “Wouldn’t it be interesting to see if it was in the Interpol database?” And he loaded his CD-ROM and bingo, there it was.

So the American art dealer went to the local police and said, “Look, I’ve bought this in good faith. It appears to be a stolen work of art.” And the police then contacted their Interpol National Central Bureau, and the NCB contacted Interpol headquarters. We confirmed it with our works-of-art specialist, contacted the originating country and said, “Your bust is in New York with an art dealer.” Then they entered the complex process of recovery. Eventually the piece was repatriated.

Interpol’s mission is to track down some of the world’s most unsavory characters. Have you been able to maintain faith in humanity while working there?

I can’t think of a more exciting mission than to help make the world a safer and nicer place to live by providing these services to the police forces of the world. I think it’s a great place to be. **CIO**

Is your technology missing something?



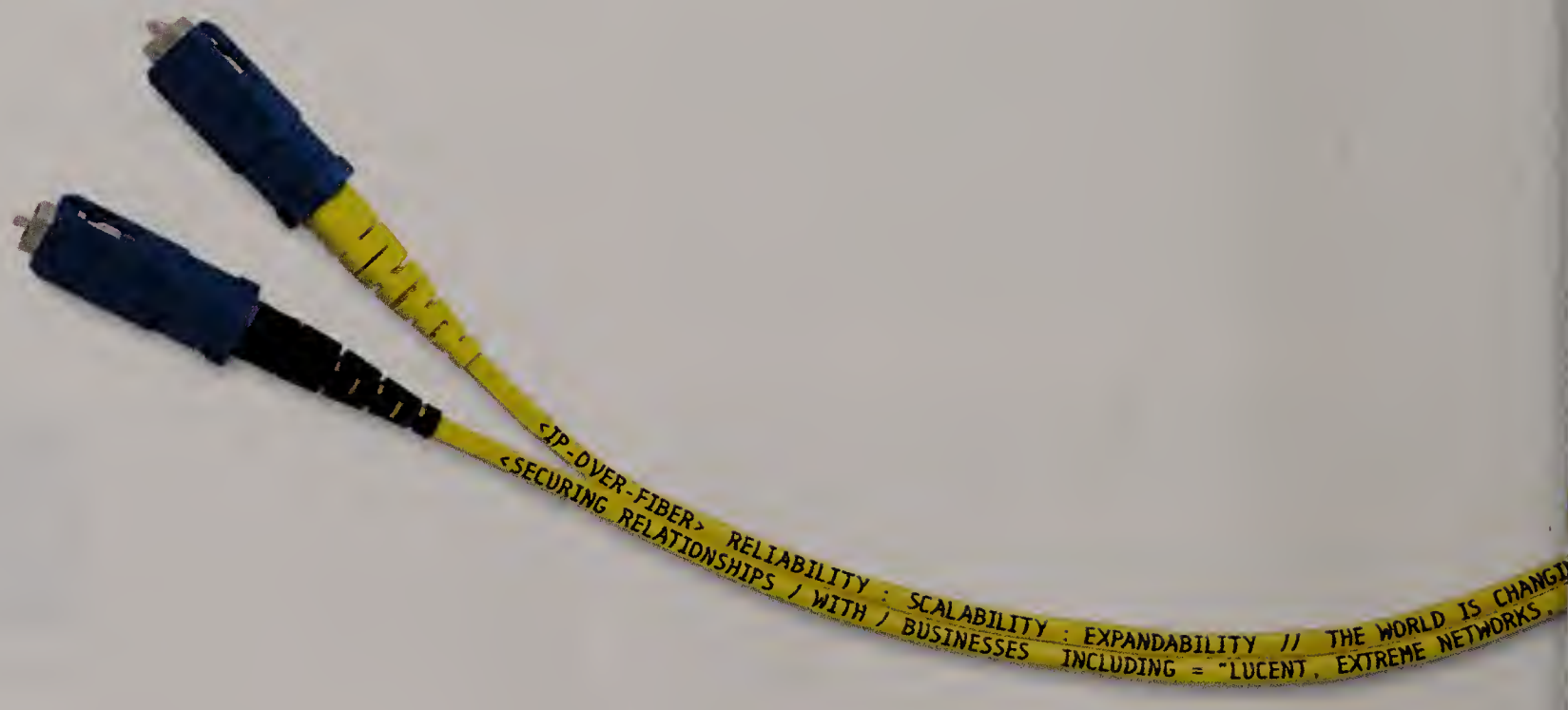
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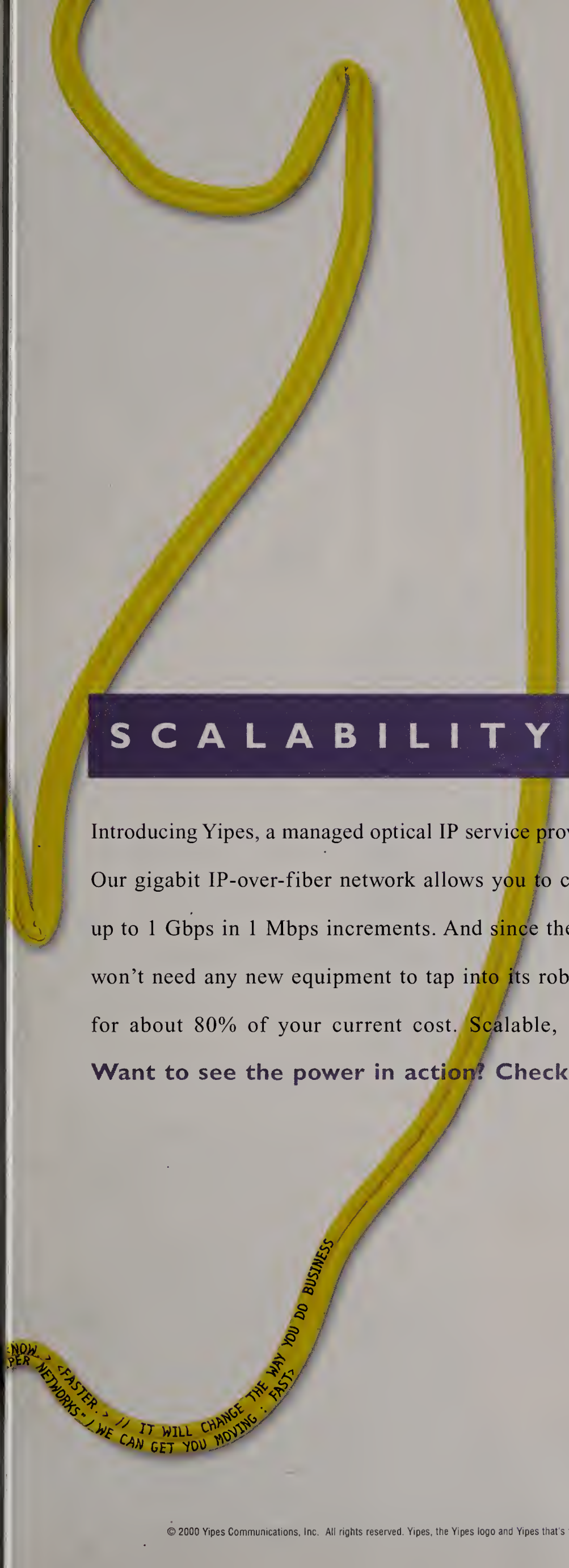
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THE LINK MISSING

BY LEE PENDER

Integrating ERP with e-commerce applications doesn't have to be a nightmare, but it depends on where you start

Reader ROI

- ▶ Learn why integrating ERP with e-commerce is a problem
- ▶ Find out how companies are tackling integration issues

E-commerce applications are the flashy newcomers in many companies' IT departments, complete with glitzy Web interfaces, handy real-time capabilities and enough "blue sky" revenues and cost savings projections to make just about any CEO smile.

But despite the increased attention and extra hours of work that e-commerce has made for many CIOs and their staffs, it's the other "E"—enterprise resource planning (ERP) software—that controls business processes. In fact, in companies of all sizes, ERP provides functionality that helps products ship on time, tracks company revenues and distributes pay to employees.





THE TASK OF COMMINGLING ERP AND E-COMMERCE APPLICATIONS IS ONE THAT REQUIRES CONSIDERABLE PLANNING.

Problem is, the information from the back end of ERP doesn't always make it into e-commerce applications—and vice versa. Some companies' efforts at beating competitors to the e-commerce punch have created islands of applications that take and process orders but keep important customer information that should go into an ERP system to themselves. Also, the inability to share e-commerce information has made ERP implementations look dated. Further complicating the situation is that some companies need to figure out how to connect their internal e-commerce and ERP applications to their systems of suppliers and partners.

The burgeoning online marketplace has precipitated a need to link an organization's internal and external systems. Some of the more high-profile e-commerce networks—such as the one being established by a group of U.S. automakers (spearheaded by Oracle and Commerce One)—will face unprecedented integration challenges. Failure to connect systems within and between companies could make the establishment of electronic marketplaces inefficient, instead of cutting procurement costs, which they are designed to do.

What's happening is that companies are setting up e-commerce infrastructures to meet all kinds of goals, from improving customer

service to cutting costs and building new online sales channels. As a result, CIOs now face the challenge of integrating the new world of e-commerce with the old world of ERP and, in some cases, the dreaded legacy systems left over from the days when the Internet was still a government-only experiment.

The task of commingling e-commerce and ERP applications is one that requires considerable planning. In fact, experienced CIOs advise a seemingly simple approach: Have a plan, and stick to it. That plan, however, relies heavily on an IT department's resources and the systems it already has in place.

As most CIOs know, integration is problematic because systems aren't usually designed to share information.

Barry Weber, vice president of technical infrastructure at online bookseller Barnesandnoble.com in New York City, agrees: Before e-commerce, applications had little reason to share information. "Systems, by their very nature, grow up solving a particular problem as opposed to sharing information with other systems," Weber says. "They've got information inside of them, but they were not meant to use that data other than for their own purposes."

Add to that the difficulties with defining

uniform data fields and ensuring data integrity. The result? IT departments can't accurately track their e-commerce data in their ERP systems and can't push information from ERP to e-commerce applications.

Although such problems are all too familiar to most CIOs, the solutions can be daunting. For those companies that were smart—or lucky—enough to have bought their ERP systems from a vendor experienced in developing e-commerce wares, adding easily integrated applications from that same vendor can be a money-saving option. For those companies whose ERP systems came from vendors that are less experienced with e-commerce development, the best—and possibly only—option might be to have a combination of internal staff and consultants hack through a custom integration.

But no matter what the details are, solving the difficult problem of integrating ERP and e-commerce requires careful planning, which is key to getting integration off on the right track.

"To make [our ERP and e-commerce systems] efficient, we needed to be able to connect with anybody," says Dennis Benner, vice president and CIO of Fluor Corp., an Aliso Viejo, Calif.-based engineering and construction company. Benner suggests first figuring out what a system needs to do and then building a system based on those requirements.

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A well-thought-out planning phase can help root out potential problems with data redirection that are easier to fix upstream in the planning process than later on during the post-integration testing process. After mapping out the functions that an integrated system must perform, CIOs need to decide whether to have their IT department execute the plan in-house or to hand it off to a vendor.

Going Solo

Keeping an integration project in-house can offer the freedom to find creative solutions to integration problems. What's more, hacking through an integration process in-house lets CIOs experiment with various integration methods and architectures. And while CIOs warn that integration projects can be more time-consuming and expensive than anticipated, that doesn't mean those projects don't get results.

The PSSI staff ran into the classic problem of mismatched data formats and had to bring in experts to help link the various formats. Table structures differed between PSSI systems, which meant that data-intense files often did not have a clear path between systems. To compound problems, PSSI had to write every interface twice because some of its worldwide locations were running legacy systems.

To solve its growing list of problems, the company hired two independent J.D. Edwards consultants, who were instrumental in linking the J.D. Edwards data formats to those of other systems and writing interfaces. Ultimately, the team created a middleware layer between OneWorld B73.3 and the e-commerce apps that fed the B2B database with ERP information.

"As the system sees transactions coming in, it would look for (transaction data) and populate the B2B database," Ramsey recalls.

systems share financial and real-time inventory information on 15 million products.

Weber's team created a publish-and-subscribe architecture for product and inventory information using e-Gate, an enterprise application integration tool from Software Technologies, to create a middleware layer that takes data from one system and transforms it into a format that's compatible on multiple systems. In addition, Weber's staff used e-Gate to build interfaces that linked directly to SAP to control the flow of financial information, which Weber considered too critical to trust to the occasionally unreliable publish-and-subscribe method. "Sometimes you need to be able to guarantee that data is flowing end to end. Publish and subscribe breaks this [process] in the middle." When data integrity is at stake, Weber advises building interfaces that link directly into ERP systems, which let IT staff verify

AS MOST CIOs KNOW, INTEGRATION IS PROBLEMATIC BECAUSE SYSTEMS AREN'T USUALLY DESIGNED TO SHARE INFORMATION.

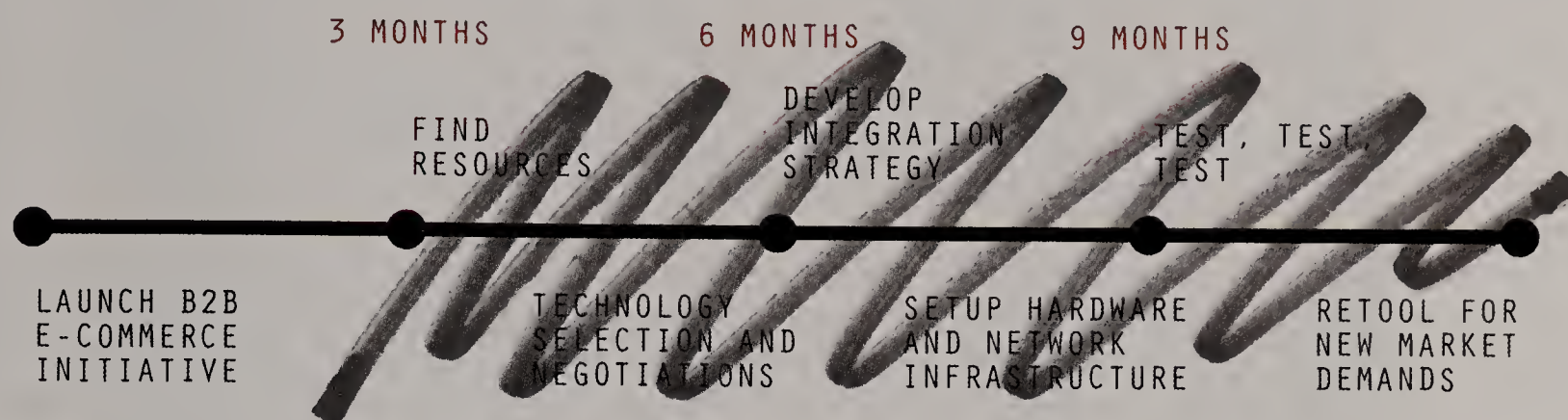
David Ramsey, CIO at PSS World Medical Inc. (PSSI), a marketer and distributor of medical products to doctors, in Jacksonville, Fla., offers a case in point. His IT staff needed to link the company's sales-force automation and business-to-business e-commerce applications to its ERP and make the integrated system accessible to its salespeople, who use laptops. The goal was to create a system that could run independent of the Internet but could periodically synchronize with a product database via the Internet. First, the company got its disparate databases and hardware into shape, standardizing on an Oracle 8 database and an HP/UX platform. Ramsey's staff then built custom interfaces from the company's ERP system—J.D. Edwards's OneWorld B73.3—to its e-commerce and SFA applications.

"That was a strategic move. We weren't going to write our B2B applications to hit the ERP databases." By not linking the B2B applications directly to the ERP database, PSSI could continue to perform maintenance on the ERP system—which required some ERP downtime—without interrupting 24-hour access to B2B applications.

The opportunity to take control of integration projects has led other CIOs to bring their projects in-house. Barnesandnoble.com faced a particularly daunting integration challenge. The bookseller's task—hooking a homegrown Web system with SAP AG's R/3 ERP applications—would have been tough on its own, but the company also had to deal with data for multiple products. That meant that integrating Barnesandnoble.com's systems involved figuring out a way to have its

data flow—something that publish and subscribe does not permit.

Like PSSI's Ramsey, Weber found that he preferred the freedom to experiment that the in-house project gave him. Ramsey, however, had a tension-filled wait for the benefits of PSSI's integration to become apparent. In fact, the PSSI integration took 18 months to complete and went \$500,000 over budget. Fortunately, the project ultimately increased the company's bottom line: PSSI's new online selling capabilities increased annual revenues by \$75 million to approximately \$2 billion. Even better, the SFA integration efforts have helped boost the performance of sales representatives, who can now place and service orders that once had to go through a customer service call center. That feature, along with improved online customer service, has



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allowed the company to cut its call center staff by almost half.

Hiring Help

Despite the rewards of keeping an integration project in-house, some smaller or less IT-intensive companies prefer to let their ERP vendors do most of the work. That may be especially true for IT departments that have neither the expertise to complete a major integration project in-house nor the budget to hire consultants to help with the process. The ongoing shortage of IT professionals can thwart even the best-laid plans for in-house projects. For some companies, outsourcing integration to an application vendor or tacking an ERP vendor's e-commerce applications onto that vendor's ERP system has been a lifesaver. That certainly was the case for Rick

DaPrato, manager of enterprise information systems at Alpha Industries Inc. in Woburn, Mass. In fact, his company's integration experience was a joy, largely because of a choice he made when e-commerce was in its infancy. In May 1995, DaPrato's company replaced its outdated legacy system with Point.Man, a manufacturing-focused ERP system that's now offered by Mapics.

The Plunge Not Taken

Despite analyst estimates, e-commerce investments lag

By now, it's no secret that e-commerce is big business, but that doesn't mean corporations have hit the ground—or the Web—running when it comes to ramping up their e-commerce capabilities. In fact, a surprising number of companies haven't even begun to tackle e-commerce projects.

Such e-commerce lethargy flies in the face of industry analysts who predict e-commerce activity to continue to skyrocket. The Yankee Group, a Boston-based analyst company, anticipates that companies will, on average, purchase nearly 30 percent of their goods and services electronically by 2004. In some industries, that number could hit 50 percent. And in 1999, only 2 percent of maintenance, repair and operating (MRO) supplies changed hands via the Internet, whereas The Yankee Groups estimates that by 2004, that number should hit 40 percent.

Another industry watcher, Meta Group, in Stamford, Conn., polled 357 U.S. companies with annual revenues of \$100 million or more. That survey indicated that companies are not getting out of the e-commerce blocks as fast as its growing popularity would suggest. Of the companies surveyed, only about 10 percent are spending more than \$5 million a year on e-commerce, whereas 65 percent aren't even spending \$1 million per year on e-commerce.

In such a Web-obsessed business environment, it's difficult to understand why those investment numbers are so low. One reason might be the tight labor market for IT professionals. Among Meta's survey respondents, a plurality (24 percent) indicated that staffing tops the list of e-commerce investment needs.

Apparently, technology concerns have taken a backseat to people problems.

—L. Pender

Alpha, which supplies semiconductors and integrated circuits to such companies as Motorola.

That dilemma eventually benefited Alpha, which ended up hiring PivotPoint to handle its integration. While large ERP vendors struggle to balance customer support with building and releasing e-commerce

inventory status in real-time, PivotPoint provided an integrated solution by building an e-commerce application from scratch.

"We gave them the server and said, 'Here's the hardware; configure it,'" DaPrato says. "They brought it back fully configured."

And to DaPrato's surprise, the system worked. Customers in Europe and Asia, who had previously waited for as many as two days for order information, could access inventory data instantly. DaPrato estimated that the project—including hardware and the cost of software development—was less than \$30,000. And outsourcing e-commerce integration to a vendor freed up DaPrato's 16-member staff to spend more time supporting the company's 700 or so users.

Ron Pollard, CIO of Specialized Bicycle Co. in Morgan Hill, Calif., had a similarly pleasant experience. Back in 1995, Specialized used Oracle's ERP offering to upgrade its back-end technology. The com-

OUTSOURCING E-COMMERCE INTEGRATION FREED UP ALPHA'S I.T. STAFF TO SPEND MORE TIME SUPPORTING USERS.

DaPrato initially considered using one of the larger vendors, such as SAP or J.D. Edwards, but found that they were more interested in working with Fortune 500 companies than with smaller businesses like

applications, PivotPoint (purchased by Mapics in December) was available to handle all the headaches of e-commerce integration for Alpha. What's more, two years ago, when Alpha's global customers needed to check

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DESPITE THE REWARDS OF KEEPING AN INTEGRATION PROJECT IN-HOUSE, SOME SMALLER OR LESS I.T.-INTENSIVE COMPANIES PREFER TO LET ERP VENDORS DO THE WORK.



pany now runs the manufacturing and financial components of Oracle 10.7 and plans to upgrade to Oracle 11i. More recently, Specialized had the alarming realization that its customers were being swept away by e-commerce competitors. To combat that worrisome trend, the company decided to create its own online store of which the company's independent partners would own 51 percent.

Such a store, however, meant that Specialized would have to integrate its e-commerce applications with the Oracle back end. When estimates for integration projects came back with the word "million" on the price tag, the company, whose ERP and e-commerce administration staff comprises fewer than 10 people, decided to turn to Oracle. The company implemented Oracle's iStore, which provides a Web storefront and facilitates the flow of e-commerce information into Oracle 10.7. Specialized's newly integrated ERP system, which feeds inventory information to iStore, allows customers to check their orders in real-time. Pollard also enlisted implementation partner FutureNext, based in McLean, Va., which worked with Oracle to complete the iStore implementation in 40 days. Because Oracle's

application programming interfaces for iStore matched those of 10.7's components, custom interfaces were unnecessary. But keep in mind that attempts at integrating iStore with ERP systems other than Oracle's would likely create a much greater integration challenge.

Though companies that rely on a single vendor for ERP and e-commerce applications risk sacrificing some functionality and the freedom to create their own architecture, a single-source setup can be the savior of small IT departments. Pollard says his company would not have been able to create e-commerce capabilities had Oracle not provided an integrated e-commerce piece that tacked on relatively easily to its ERP. But Pollard admits—as does DaPrato—that e-commerce applications were not on his mind when his company chose Oracle.

"In 1995, no one had a clue that [we] would have all these benefits," Pollard said. "The buzz was ERP. There was no vision of [e-commerce]."

Pollard and DaPrato also confess that, at the time that they chose their ERP systems, they didn't think that they would be returning to that same vendor for e-commerce

help. Most large companies have already chosen an ERP provider—meaning they do not have the luxury to choose a vendor that offers strong e-commerce capabilities—and many have finished implementations or are into them too deeply to turn back.

For smaller companies with limited resources, buying integrated e-commerce applications from an ERP vendor can be an answer to integration nightmares.

But not every ERP vendor is dedicated to producing integrated e-commerce applications. Those companies whose ERP vendors are not sufficiently e-commerce savvy should, however, take heart because there's an alternative—packaged middleware, which can reduce the work involved in writing interfaces. Advancements in enterprise application integration middleware and new e-commerce offerings from ERP vendors should continue to make ERP and e-commerce integration efforts more accessible and less costly for IT departments.

"It has moved from black magic to just hard work," Benner says. **CIO**

Senior Writer Lee Pender wants to hear about your integration woes. Send him an e-mail at lpender@cio.com.

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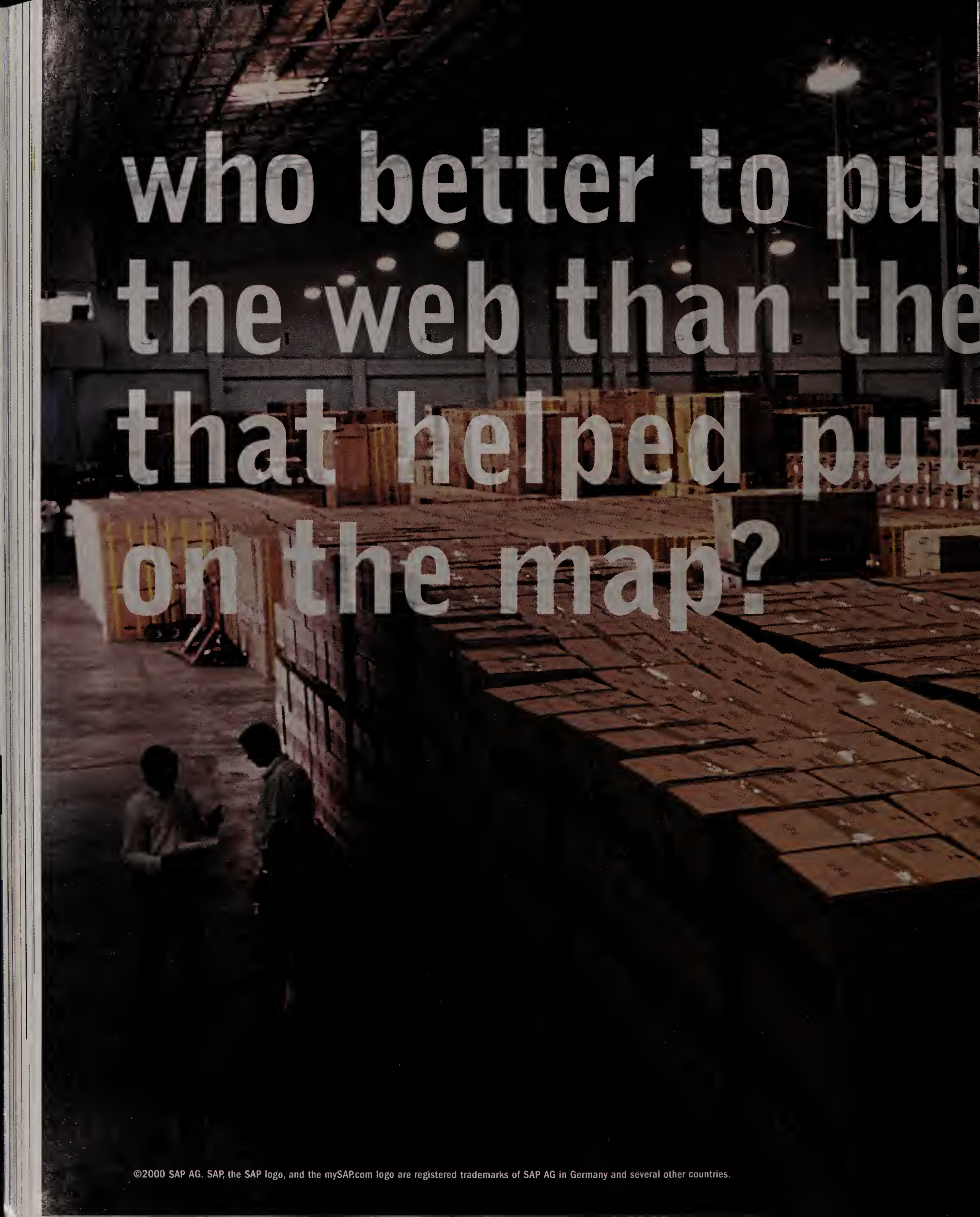
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Keep on Trackin'

Schneider National took a scientific approach to evaluating and selecting an emerging technology BY BILL ROBERTS

Value Methodology

Schneider National has been evaluating the emerging technology of untethered trailer tracking for nearly a decade. In its search for a suitable system and a supplier that could provide it, the company set cost hurdles and established an ROI model. During a beta test, it measured four technical metrics and assessed the financial results.

WITH CLOSE TO 15,000 TRACTORS and 43,000 trailers, Schneider National, based in Green Bay, Wis., is the largest truck-load carrier in the United States. Its annual revenues are nearly \$3 billion, which include a billion-dollar-a-year transportation logistics business.

In the past 12 years, Schneider has pioneered the use of technology to track rolling assets. In 1988, it was the first customer of Qualcomm to adopt the then-little-known startup's geostationary satellite-based communication system. Schneider now has 15,000

Qualcomm OmniTRACS units, which provide two-way alphanumeric communication and positioning information between drivers and the fleet management system.

Schneider also pioneered the use of radio frequency (RF) identification tags to locate trailers on railroad cars. Each of its trailers has an RF tag, which is read by devices positioned at key points along rail lines.

But Schneider wants even better information about its trailers. If a trailer is on a railcar, Schneider has a rough idea of its whereabouts from the RF tags, but not its cargo status—that is, whether it is empty or full. If a trailer is attached to a third-party carrier or sitting in a yard, Schneider has little or no information.

"The industry manages trailer pools inadequately," says Paul Mueller, vice president of communications technology services at Schneider.

Schneider's objective is to know—in near real-time—the location of each trailer in its fleet, including if the trailer is connected to a tractor or sitting on a railcar and whether it is



COO Christopher Lofgren (left) and **Paul Mueller**, vice president of communications technology services, worked with a cross-functional team to specify target costs and benefits.

loaded or empty. The application that would serve these needs is called untethered trailer tracking, and Schneider plans to use it on more than 25,000 trailers. In the low-margin trucking business, it expects untethered tracking to improve its revenue per trailer. "Ultimately," says Mueller, "revenue is the measurement of how well we load and move these trailers."

Targeting Costs

Schneider has studied emerging technologies for nearly a decade, waiting for them to mature and for costs to come down. "Very early on, we understood the value proposition," says Christopher Lofgren, the company's chief operating officer, who until recently was chief information and logistics officer. "The challenge was to find the technology and a capital and operating expense that was viable."

When the company initiated its investiga-

tion into the possibility of a tracking application in 1993, Mueller began to work with several potential suppliers to understand the technical issues and business opportunity. By early 1995, he formed a companywide cross-functional team. It included staff from IS; customer service, which is responsible for trailer management; line-haul services, which is responsible for equipment evaluation, engineering and maintenance; and finance.

By 1996, the team established an ROI model that included target costs to be met before the investment would make financial sense. Targets were set for capital equipment, messaging services, installation, maintenance and integration of the trailer tracking system with the existing fleet management system. Together, these comprised the total cost of ownership (TCO).

The targets were somewhat arbitrary, Mueller admits, based on the cost of components the system would need and what

"We're dealing with emerging technologies, and it's not the same as a typical IT acquisition."

—PAUL MUELLER, SCHNEIDER'S VICE PRESIDENT OF COMMUNICATIONS TECHNOLOGY SERVICES

Schneider figured the industry would pay. Industrywide adoption is important to Schneider because its transportation logistics business manages hundreds of thousands of shipments using more than 1,000 third parties. "We understood the prevailing costs, but that's about all the science that was involved," Mueller says. "We're dealing with emerging technologies, and it's not the same as a typical IT acquisition. If we were going to buy software it would be a much crisper procedure, going through the typical stuff—needs analysis, an RFP and so on."

The team decided that a system could gain industrywide adoption when the price of the capital equipment for the trailer reaches less than \$600 per unit, and messaging costs reach \$15 or less per month per unit for one message a day. Mueller declined to disclose Schneider's actual costs or the TCO target. But these costs, applied to the 25,000 trailers Schneider plans to equip, makes just these two pieces of the solution a \$20 million project.

Revenue Per Trailer

Schneider felt the benefit of untethered trailer tracking would be to improve revenue per trailer, which "is our ultimate measurement of ROI," says Mueller. Three factors figure in revenue per trailer: reduction in the number of trailers, reduction of unbilled miles per load and increase in tractor utilization. Since Schneider gets paid only when a trailer is loaded and moving, it believed untethered trailer tracking would improve all three by reducing the amount

of time that trailers sit idle.

Reduction in the number of trailers is something of a misnomer because Schneider does not expect to reduce the size of its fleet. The goals are to make better use of the trailers it has and slow the pace of buying new ones. In calculating the reduction, Schneider factors in annual depreciation and the average book value of a trailer. Reducing the number of trailers has two payoffs: the ability to avoid the cost of new trailers and the ability to invest the savings elsewhere.

The second and third elements of trailer revenue are linked. Unbilled miles per load is a measure of not having trailers in the right place at the right time. Improved tractor utilization is a measure of increasing the billable miles on tractors. They both arise from the same circumstance. "It is not uncommon to have to send drivers off-route to get trailers," says Mueller. "When they arrive, the trailer isn't there or it might be loaded." If the company reduces these occurrences, it can improve the billable miles on both tractors and trailers.

"The three key elements combined are measured by the single metric of revenue per trailer," explains Mueller. "We take the three factors and identify the total impact. We then come up with an annual financial impact that we are looking for over the life of the asset and measure that against the cost of ownership." Mueller declined to specify the revenue increase target. He does say if the target is hit, Schneider will reap "payback in significantly less than five years."

The team also identified several soft benefits, including customer and driver satisfaction. Customer satisfaction can be achieved through better on-time delivery and in-transit visibility of freight. Driver satisfaction can be accomplished by increased earnings via increased billable miles. The soft benefits would serve as tie breakers, Mueller says, if quantifiable returns weren't clear-cut.

Narrowing the Choices

By 1997, Schneider had pared the list of possible suppliers from more than 15 to four—three for the immediate future and one with

CRITICAL ANALYSIS BY DOUGLAS HUBBARD

Try Simulation

Schneider identifies some excellent metrics, and it also makes use of scientific observation by conducting a controlled experiment with a control group and a test group. This alone puts Schneider in a small group of best-in-class IT investment analysts. The company even uses some excellent decision-theory methods that are far too rare in IT. Nevertheless, there is still room for improvement.

First, I'll address an issue that is a source of great philosophical battle between accountants and economists. Accountants treat depreciation and book value as "real" dollars. Economists, along with management scientists, financial analysts and virtually everyone else, do not. I'm in the latter camp. Book value is not the same as the cash received if a trailer is sold or the cash spent if a new one is purchased. If one of the benefits of Schneider's proposed investment is a reduction in the number of trailers (or avoiding the purchase of new ones), then they should measure that.

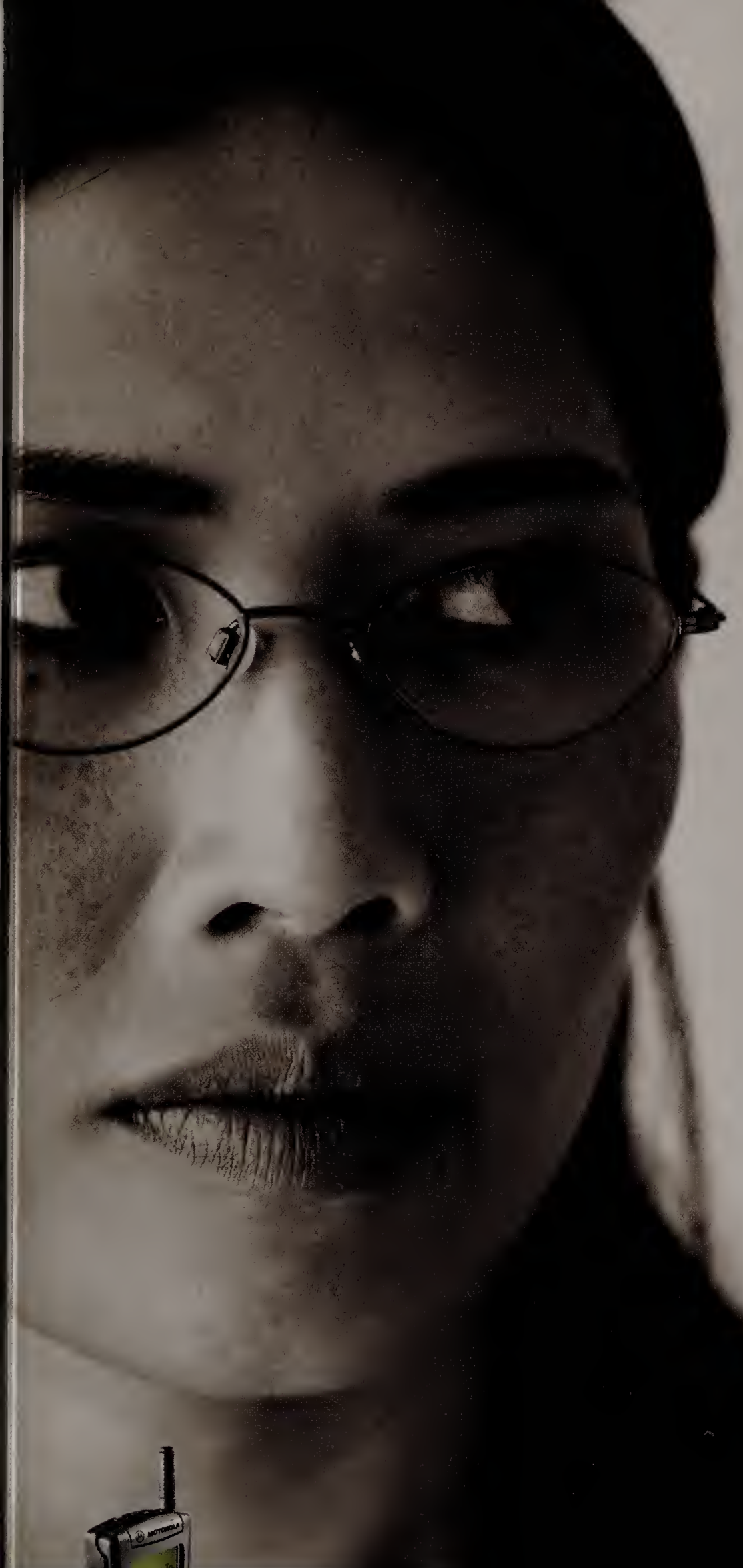
The "technical metrics" identified are good, observable quantities. Methods like what Schneider used for multivariate comparisons have a good foundation in decision theory and, in many cases, have been shown to improve decisions. But these methods are only necessary if the investment is too small to merit development of a more realistic economic model. A \$20 million-plus investment does not usually fall into this category. Each of the four comparative metrics could, instead, have been used in a computer simulation of transportation operations. For a fraction of 1 percent of the cost of the investment, Schneider could simulate thousands of shipments on hundreds of routes and tally the effects on profit of latency and the other measures. Profit is the most relevant single "statistical figure of merit" that could have been devised.

Readers of *CIO* may already know my position on intangibles—namely, I believe there are none. The same simulation created to assess the effect of latency and other characteristics could model the occurrence of late and lost shipments. Then Schneider could analyze historical shipment and customer data to find statistical correlations of late and lost shipments on repeat business from a customer. The same analysis might be used to correlate driver turnover to billable trailer miles. Drivers and customers have real, observable (and probably already recorded) effects on profit that are no "softer" than revenue per trailer.

Finally, a five-year payback for a large and risky technology investment is really not that good. Once risk is accounted for, many leading-edge investments require paybacks of two years or less. But I suspect that a more complete ROI that includes increased customer and driver satisfaction might achieve the required payback.



Douglas Hubbard is founding partner of Hubbard Ross in Glen Ellyn, Ill. Hubbard Ross uses the scientific and mathematical principles of applied information economics to systematically analyze the economic value of any IT investment. Hubbard is the inventor of applied information economics and has more than 12 years' experience in IT management consulting. He can be reached at dhubbard@hubbardross.com.



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longer-range potential. Other technologies, including paging networks and specialized mobile radios, were considered but “it didn’t take a lot to narrow down to a choice between satellite and cellular,” says Mueller. Each of the four short-list providers offered one or the other.

Because of its long-term relationships with providers, Schneider did not need to issue an RFP or evaluate providers on a scoring system, Mueller says. Besides offering satellite or cell, he says, each shortlister was also capable of providing cargo status monitoring; hook-unhook sensing; effective battery power management; and a message processing infrastructure.

Schneider then entered a period of intense work with the short-list candidates to define system requirements and other details. It eventually worked through all of these with two of the candidates, and made get-to-know-you visits to the manufacturing partners of each provider. Then it began implementation planning primarily with one provider and Schneider’s trailer manufacturer. At this point, Mueller says, Schneider focused on a single provider because it believed its technology was the most mature and that the provider was best able to deliver that technology.

In the second quarter of 1998, Schneider decided the low Earth orbit satellite technology from the Vantage Tracking Solutions division of Orbcomm Global was mature enough to test. Planning began for a beta test that involved 10 trailers from a single customer assigned to one-day controlled routes and another 10 trailers assigned to normal, multiday routes. It took place in late summer 1998, providing the first opportunity to measure the value of the project.

The Technical Metrics

Schneider measured four characteristics of the system:

- **Messaging latency**, which is the lapsed time between the recorded event on the trailer and when the message is sent by the Orbcomm network to Schneider. The big variable

is satellite visibility. Messages are time-stamped when the event occurs. Measuring latency is a matter of comparing the time stamp with the departure time from the Orbcomm network, as noted by Orbcomm.

- **Cargo status monitoring**, which uses ultrasonic frequencies inside the trailer to determine whether it is empty. Schneider

Valuation Flow Chart

Schneider’s technology evaluation and selection

1. Specify ROI model with target costs and benefits
2. Perform technology assessment
3. Select preferred provider
4. Conduct beta test
5. Assess technical metrics
6. Examine financial results
7. Perform due diligence
8. Enter formal agreement

compared the readings with what it knew about the trailers’ status from the drivers.

- **Connect sensing**, which tells when the trailer is connected or disconnected to a tractor, and when it is loaded onto or lifted from a railcar. When a trailer is hauled by a Schneider tractor, the driver sends a message when he picks up or drops a load. These data points were compared with the sensor data.

- **A reliability check** to see if the global positioning system (GPS) location was included accurately in the body of the message. The company compared the data provided by the trailer tracking system with that provided by the Schneider driver.

Schneider took all four of these metrics, weighted them equally (in subsequent analyses, Schneider used unequal weighting of the metrics) and used them to calculate a statistical figure of merit, a way of looking at multicomponent attributes and merging them

into one metric. “This gave us an overall perspective of the operational delivery of the system,” says Mueller. He declines to specify the target figure of merit.

The Financial Results

Schneider also calculated the revenue per trailer in the test group and compared it with the fleet average. The data for this comparison—billed miles, unbilled miles and so on—exists in the fleet management system. It was just a matter of mining it, assembling it and analyzing it. “The revenue per trailer for the control group was high enough that we may have exceeded expectations,” says Mueller. “But the control group may have gotten more attention, causing more rapid decision making than would be the norm. The question is, do the financial results scale?” The four technical metrics above suggested the system worked well enough to improve fleet management, so in fall 1999, Schneider began to outfit more trailers; it now has hundreds in use and continues to measure performance on the four metrics and to assess financial results. “The sample is larger, and we’re still seeing strong financial results,” says Mueller.

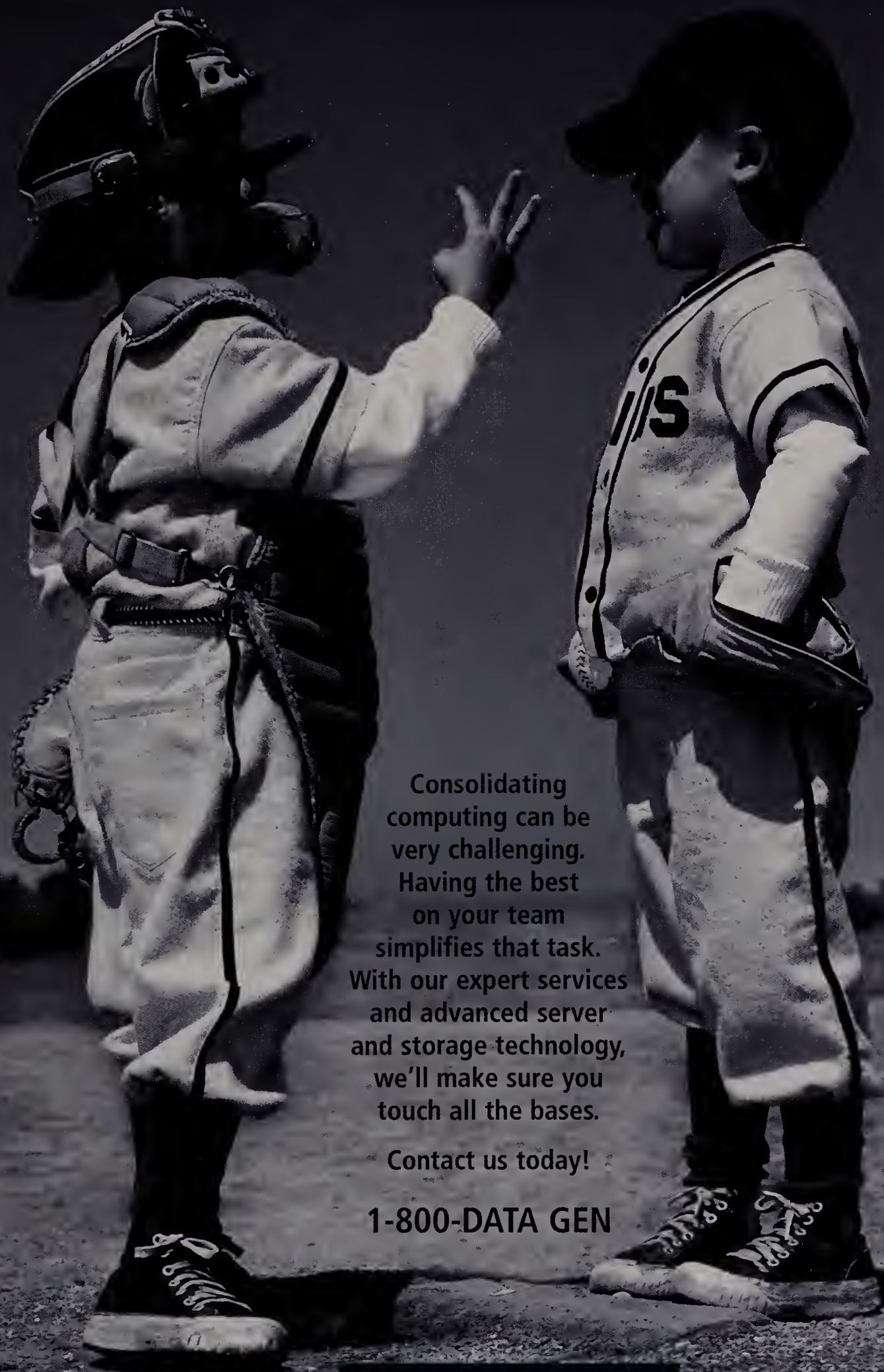
While the beta test was in progress, Schneider began its financial due diligence on Orbcomm and hired a consultant to do technology due diligence on the Orbcomm hardware and network infrastructure. The process was complete by March 1999. In April 1999, Schneider entered into a formal agreement with Orbcomm.

What if the beta test had failed? Schneider would have decided whether another provider was ready to move ahead, says Mueller. “We have not terminated all of our discussions or said the decision is cast in granite. We will never deviate from that.” **CIO**

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Bill Roberts is a freelance writer based in Los Altos, Calif., who covers business, technology and management issues. He can be reached at brobert1@ix.netcom.com.

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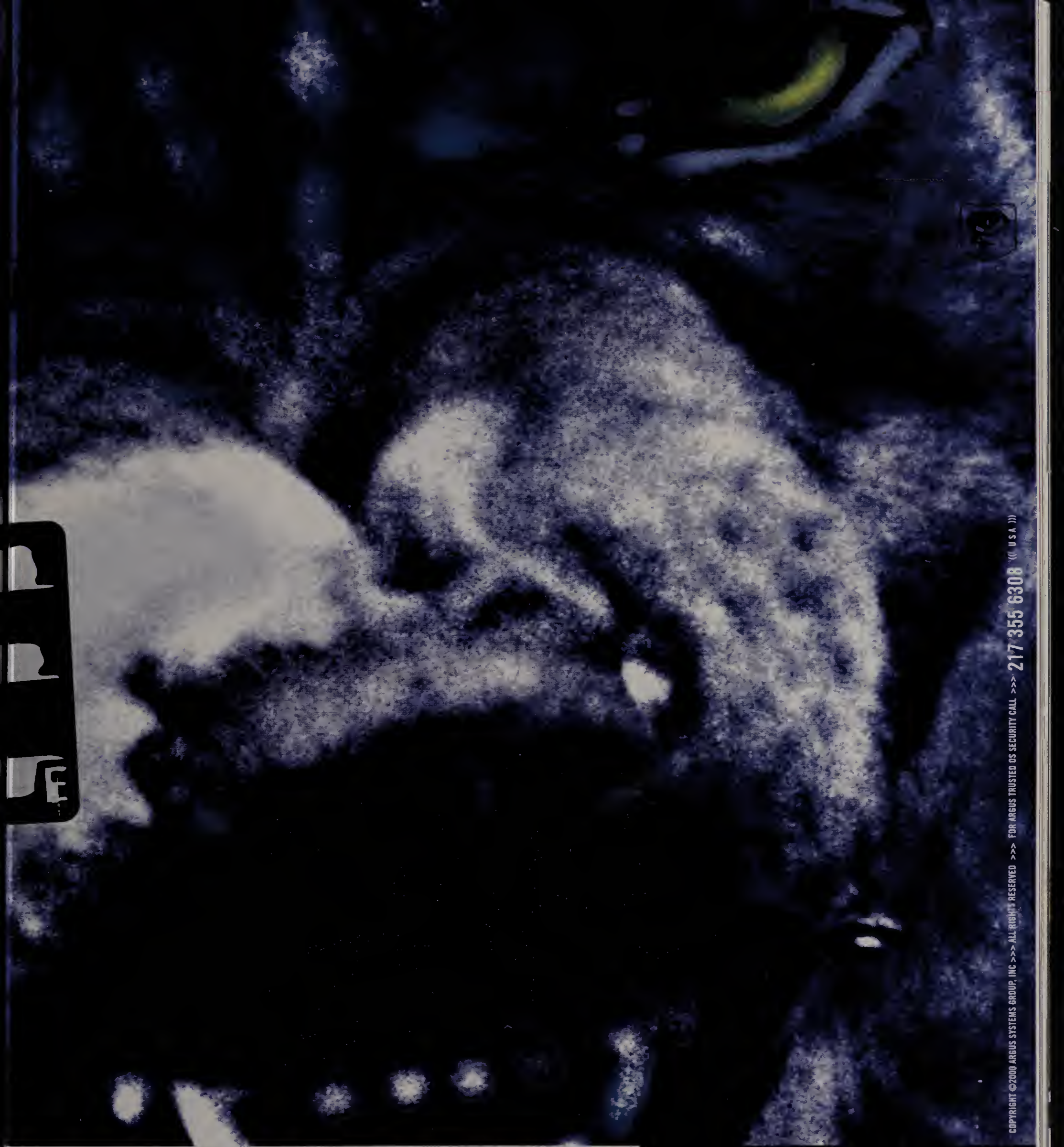
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A Head



for the Business

GLOBAL I.T. LEADERS—why you need them and how to develop them

BY ELIZABETH HEICHLER

Filippo Passerini is an IT executive who's worked in five countries on three continents. But what really proves this Procter & Gamble vice president is a global leader is that he wants to know what shampoo you use.

Although the Rome native, now vice president for information technology at P&G's Global Beauty Care business in Cincinnati, may be a citizen of the world and a great communicator, he also has what CIOs at major international companies identify as the most important quality in leaders who can implement global technology strategies: a good head for business. And in his business, that means Passerini sees your head as one that should be lathering up with Physique shampoo, one of P&G Beauty Care's newest products. He's dreaming up technology such as in-store computer makeovers to help bond with consumers wherever in the world the company decides there's a market for this brand.

Reader ROI

- ▶ Learn what to expect from your IT leaders worldwide
- ▶ Discover how to identify prospects in your company
- ▶ Find out how to develop successful leaders

The current wave of globalization in business has pushed the corporate world past the point where CIOs with international responsibilities can simply carve the world up into territories and put managers in charge who are primarily technologists with a second language and a flair for regional etiquette. Today, CIOs aiming to partner with business management at the highest level say they need IT leaders like Passerini who understand the global strategies of the company and can partner with business at the regional level to consummate those strategies.

Senior managers at multinational organizations are employing a variety of strategies to ensure that they have the star leaders—and the understudies—that they need. They're keeping a sharp eye out for talent at company locations all around the world, not just evaluating the up-and-comers who blend in with the company culture at headquarters, but learning to identify leadership styles that don't necessarily fit the U.S. mold. They're taking long-term views of their staffs' career development, rotating them through assignments in different regions and different parts of the business. And finally, they're employing formal programs that ensure managers will identify people who are a good match for IT leadership positions as they open.



“What makes a leader? In my experience the one common characteristic is business understanding.”

—FILIPPO PASSERINI, VP FOR I.T., PROCTER & GAMBLE BEAUTY CARE

While a head for business seems to top the list of characteristics CIOs are now looking for in people to lead and execute their strategies around the world, great communication skills and an ear for cultural subtleties are still absolute musts for IT executives who want to succeed in an international milieu. And that includes CIOs.

Build Your Own Cultural Understanding

Technical astuteness. Business understanding. Cultural sensitivity. The ability to communicate well. That's what Pat Zilvitis, CIO of The Gillette Co., needs in IT leaders in order to carry out implementation of the corporation's ongoing global business process integration project.

“That's hard to find,” Zilvitis confesses in an interview at Gillette's Boston headquarters, where a panoramic view of the city from his perch in the Prudential skyscraper reminds him that it must be Friday because he's home. Zilvitis just returned from Germany the night before and heads out to Singapore in a week to sell Gillette's business management in Asia on the global project, which will use SAP's R/3 package to present customers in the company's larger markets with a consistent face.

The kind of behavior that's seen as leadership does vary from region to region, he says. “What you need to do is the same; it's how you get it done that's different.” Zilvitis and other well-traveled executives are wary of delving too far into cultural stereotypes, although they'll acknowledge that there is a grain of truth to some—the action-oriented North American, the analytical Brit. For example, Zilvitis says, “In Germany you order it done; in Japan you have a meeting and build consensus.”

At grow-by-acquisition conglomerate Imperial Chemical Industries PLC (ICI), Global CIO Anthony Foster finds that culture at the organization's many operating units extends across borders. “Yes, there are regional differences, but it's as big an issue—sometimes bigger—moving between [units] as between countries,” the London-based executive says. But it's clear that an effective global manager must recognize and play to cultural traits to some extent.

Erran Carmel, an associate professor at American University's Kogod School of Business in Washington, D.C., and whose book, *Global Software Teams: Collaborating Across Borders and Time Zones* (Prentice Hall, 1999) looks at the challenges of managing software development across borders, tells the story of an American software executive heading up a company's Moscow office. The manager, who has been there a number of years and speaks Russian, makes a point to occasionally “holler” at his staff,



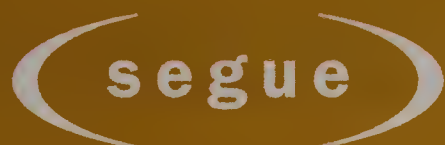
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“The people it’ll take to drive IT the next 20 years are very different from the people it took for the last 20 years. Now you need balanced skills.”

—PAT ZILVITIS, CIO, THE GILLETTE CO.

even though it’s not behavior that comes to him naturally. “That’s the Russian style of management; you have to do that,” says Carmel. “In the United States you couldn’t do that; you’d be considered a jerk. But in Russia it makes him recognized as a leader.”

Different cultures may also view some fundamental processes, such as coming up with a vision or strategy, through very different lenses, according to consultant Hunter Muller, principal of the Hunter Group in Westport, Conn., who works with multinational companies on IT leadership and human capital development. “There’s a huge difference between running an IT operation in North America and globally,” says Muller. A client once suggested that an important difference between the United States and Europe can be seen in approaches to project management. Europeans look to a starting point and build to the logical conclusion, while Americans start with an end in mind and work backward.

While this generalization may not always hold true, it’s a telling example of the variances in how people of different cultures exhibit the traits that are considered hallmarks of leadership. If North American CIOs are looking across a multinational workforce for individuals who have vision, for example, that quality may show itself differently in potential leaders who aren’t from the United States. And given the short supply of people with the right stuff, CIOs can’t

“When I took this job, I didn’t have a staff. I had to create the organization.”

—KEN MICHAELCHUCK, VP AND CIO, PHILIP MORRIS COMPANIES, WITH HEDY FOREMAN, CTO, PHILIP MORRIS INTERNATIONAL

afford to have their cultural blinders on when searching the globe for the next crop of leaders. Rather, they must broaden their own cultural understanding so that they can recognize leadership in many contexts. Otherwise, they may overlook those who lead in ways that are appropriate for their own cultures but not typical of U.S. style.

Find the Leaders Within

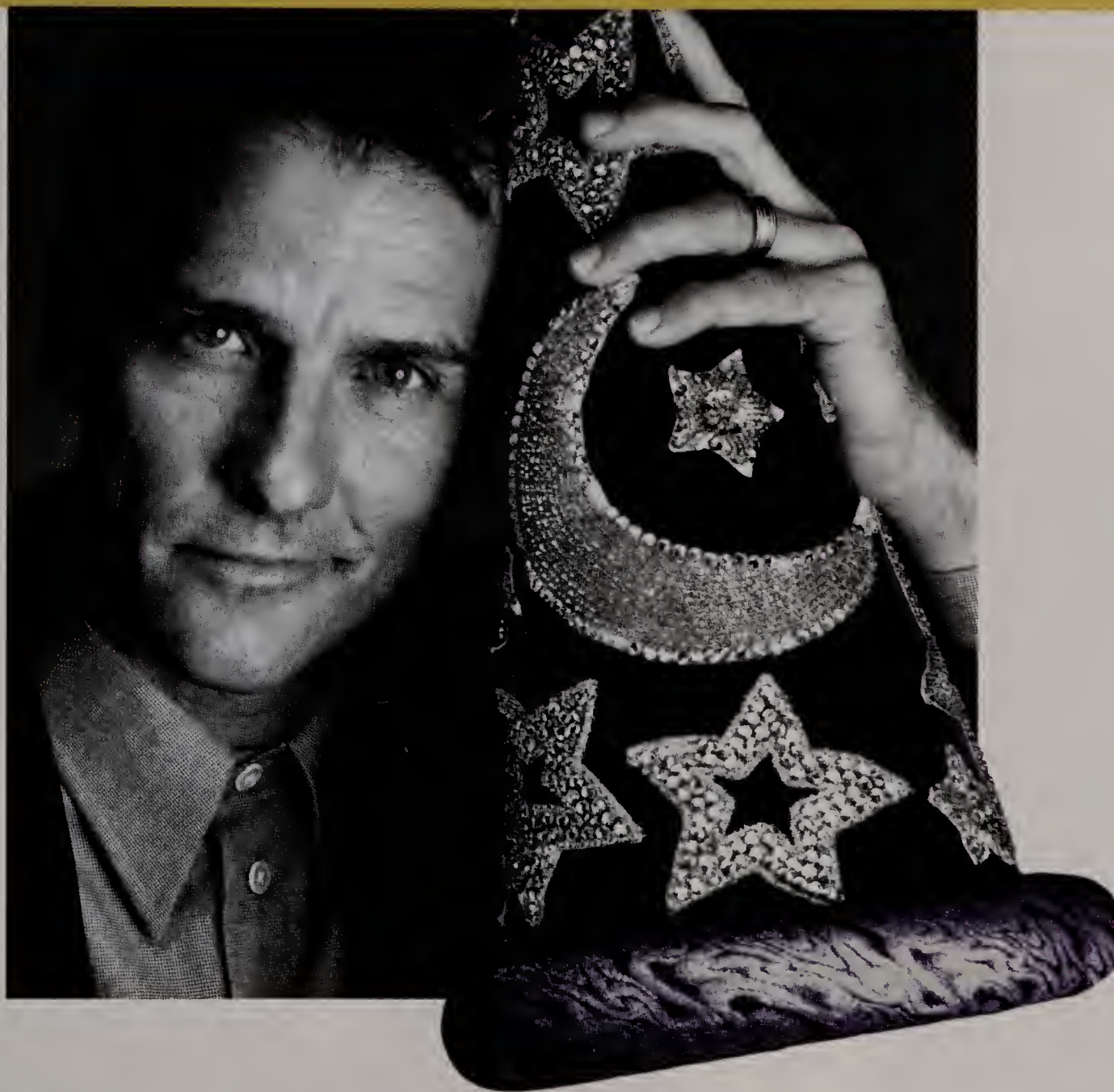
One organization that seems to have the search for leaders down to a science is Philip Morris Companies, where for the past two years Vice President and CIO Ken Michaelchuck has been building a global IT organization at a conglomerate that previously had no such centralized function. Until about three years ago, the only corporatewide IT function serving all five operating companies—Philip Morris U.S.A. and Philip Morris International tobacco businesses, Kraft Foods, Kraft Foods International and Miller Brewing Co.—was a director-level position with an advisory role in global projects but no charter to execute them. This individual was responsible for negotiating global contracts with vendors, such as Oracle, if the vendor did business with at least two operating companies or the business amounted to more than \$1 million.



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Michaelchuck says CFO Louis Camilleri changed all that when he decided to look at what the five operating companies had in common around the world, such as infrastructure, common applications and data centers, with an eye to eliminating redundancy, improving service levels and reducing costs. He also created the job of CIO at the parent company. Two years ago, Michaelchuck moved from Miller Brewing into this position, to which the CIOs of each of the operating companies are dotted-line reports.

"When I took this job, I didn't have a staff. I had to create the organization," recounts Michaelchuck. He says he looked within Philip Morris to do it and made a point to travel and meet both IT and business leaders at the company's locations around the world. And he used the company's formal leadership profile as a way to evaluate potential key players for his

staff. "We actually use this stuff," Michaelchuck says of such management tools. The Philip Morris leadership profile lists seven major attributes: smarts, trustworthy, passion to win, fires up people, does what it takes, dynamic people manager and world-class business manager.

The CIO says he found a world-class business manager when he tapped Hedy Foreman, a woman with 25 years of technology experience, to serve as CTO at Philip Morris International. She not only complements his own lack of IT background—Michaelchuck is an engineer by training and spent much of his career at Miller in operations, including plant manager positions—but she also proved her global leadership mettle moving the entire worldwide organization to a single e-mail system (Microsoft Exchange). She also shows passion and the ability to do what it takes. "Hedy really pushes the envelope

Swiss Season

A stint at global headquarters tempers IT executives for leadership

Nestlé's Jeri Dunn is the quintessential global IT leader, someone who's learned how to balance the Swiss conglomerate's worldwide technology objectives with the demands of a regional operating company. Now CIO and vice president of Nestlé USA, she has spent 11 years with the company known internationally for its food, beverage and seasoning brands. Like many individuals identified within the company as showing growth potential, Dunn was groomed for leadership through a variety of international assignments, the most important of which may have been time spent at corporate headquarters in Vevey working on global projects.

Dunn sums up the key to Nestlé's global leadership development method like this: "You bring them to the corporate office for two or three years, have them work on a corporate project. They gain skills, then go back to the home market, and both sides benefit."

Dunn is ready whenever she gets a call for resources from Jean Claude Dispaux, senior vice president for IS and logistics at Nestlé SA's global headquarters. She keeps a list of "high potentials" to which she refers when headquarters asks for people to work on a global project. "I'm sending him the cream of the crop," she says.

Dunn doesn't mind sending her top performers to Vevey because the human capital transfer works both ways: Dunn currently has seven people from Vevey or other international operat-

ing companies working for her in the United States. It's a good deal. "We need to get the global perspective; they need to leave the ivory tower," she says.

Dunn built her career at Nestlé entirely in IS. She was associate director of development at the company's Stouffer's unit when she was tapped by headquarters to work on a global project to roll out a software development methodology and CASE (computer-aided software engineering) tools. That project took three years, and she then spent another three years in Vevey as assistant vice president for all technology and standards decisions for Nestlé globally before being promoted to the CIO slot at Nestlé USA.

"I'm probably a classic example of the way Nestlé as a global company uses people from the independent operating companies, brings them to the center and educates them," says Dunn. That experience has given Dunn the broader view

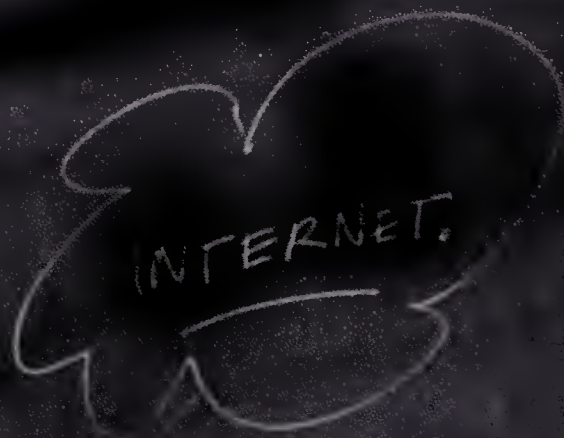
needed to carry out Nestlé's global technology strategies back in the States. For example, when she took the reins as CIO, the operating company was a Bay Networks shop, and she pushed it to migrate to the corporate standard for networking equipment, Cisco Systems. It was not a popular decision, but one that had to be made for the good of the group as a whole, she says.

"One of the beauties of taking an international assignment is that you gain an appreciation for why decisions are made," says Dunn.

—E. Heichler



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—JEAN CLAUDE DISPAUX, SENIOR VICE PRESIDENT FOR U.S. AND LOGISTICS, NESTLÉ

and tries things that have never been done before," Michaelchuck says.

The IT group at Philip Morris is now engaged in a massive data center consolidation effort, and the résumé of the individual Michaelchuck drafted to lead that project could serve as a case study on how to groom a global IT leader. "I needed someone who had experience in data centers, and I found the fellow, Darwin Stanley, in Tokyo," says Michaelchuck. Stanley, who is now director of the company's IT Service Center, had been working for Philip Morris U.S.A., then had moved to Lausanne, Switzerland, managing Philip Morris International's data center there and coordinating the consolidation of all the company's data centers in Europe. He was subsequently sent to Tokyo to run the IS office "to round him out a bit," his CIO says. "So he had worked for domestic and international companies, worked in data center consolidation, all three areas of the globe—and now he's running the whole project," Michaelchuck says proudly.

Create a Blueprint for Succession

Stanley was also ready to be singled out for a key role because he was on Michaelchuck's list: a very important list called the advancement plan. At Philip Morris, this formal process is taken extremely seriously and is used at all operating companies. The method simultaneously develops succession plans for all key positions and growth plans for all individuals. Michaelchuck bears overall responsibility for coordinating advancement planning for about 3,800 IT people worldwide.

The IT advancement plan requires management to identify successors for each position from top managers down to just below midlevel managers. Meanwhile, as part of every person's annual performance appraisal, they do a self-assessment commenting on where they see themselves going within the company, how they hope to get there and how geographically mobile they consider themselves to be. Within IT, all of this information is rolled up to the CIO of each operating company, who can expect a visit between May and July from Michaelchuck and his HR representative to discuss that unit's advancement plan. Finally, in September, Michaelchuck will present the advancement plan for the

entire IT organization to the CFO.

Up-and-comers are identified in a section of the plan for "high potentials"—these are people who are probably junior but might have what it takes to be CIOs, Michaelchuck says.

Sounds like a lot of paperwork—but it works, says Michaelchuck. "After the CIO for Kraft Foods International left two and a half years ago, I went to the advancement plan and saw that Kraft Foods North America had identified the vice president of operations as a potential person to add value to the IS side, although he didn't have IS experience. It worked out beautifully. For any opening, I can usually come up with four or five names from the bunch," he says.

Such formalized HR techniques have also helped DHL Airways in Redwood City, Calif., find people with the skills to be global leaders. Global projects are usually managed regionally, with a project manager for Asia/Pacific, Europe and Africa, and the United States, each ensuring that the technologies are in sync, tying together globally and working locally. Historically,



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however, the shipping company hadn't been as successful in managing global IT projects as it would have liked, says former Senior Vice President and CIO Jeff Lucchesi. "What it takes is people who are politically savvy, who know how to negotiate, who are very detailed, focused and driven. We worked closely with HR over a three-month period and came up with a profile and specific types of questions to ask [to help identify the best candidates]," he says.

Send Them Abroad for International Experience

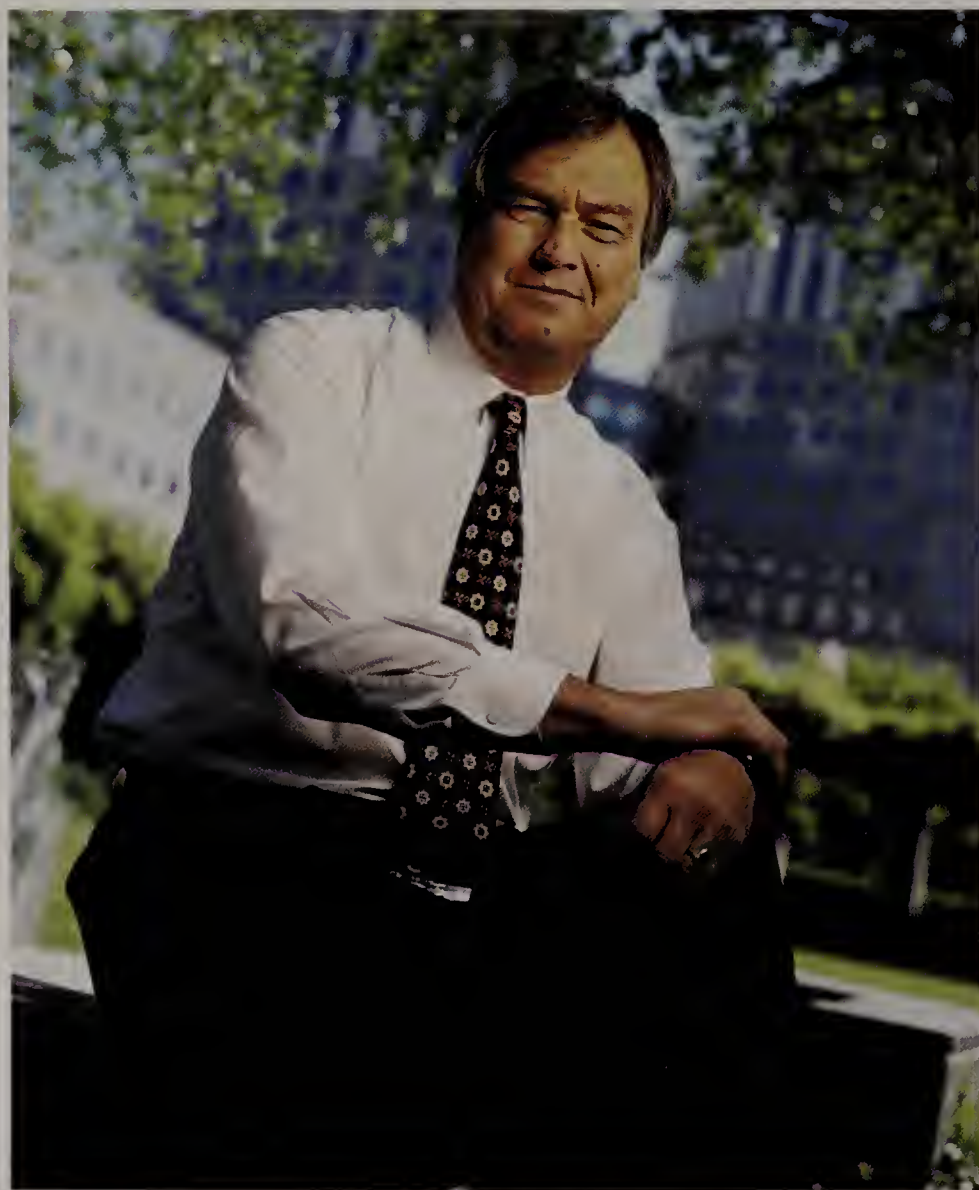
Turning a "high potential" into a global IT leader almost always involves an overseas posting along the way at companies that take their global mandate seriously. P&G's Mike Power, vice president for global business services, believes in giving people international exposure through assignments overseas where it's appropriate, although he maintains, "We're not a travel agency," and overseas postings aren't made for their own sake. He acknowledges, however, "Most senior managers at some point in their career have been

assigned on at least one other continent. It gives huge breadth to individuals." Indeed, Power's own career with P&G has taken him to Europe and Asia with time in the States as well, while his vice president in charge of global infrastructure, Wayne Matthai, did a four-year stint in Asia.

Sometimes the most appropriate overseas assignment along the way to a regional CIO position is a few years spent in the corporation's home office, soaking up corporate culture and values. That's what works for Jean Claude Dispaux, Nestlé SA's senior vice president for IS and logistics at the company's global headquarters in Vevey, Switzerland. Jeri Dunn, CIO and vice president of Nestlé USA, headed various technology and standardization efforts in Vevey for five years before moving to the company's Glendale, Calif., offices three years ago (see "Swiss Season," Page 178); Olivier Gouin, CIO for Nestlé France,

"Most senior managers at some point in their career have been assigned on at least one other continent. It gives huge breadth to individuals."

—MIKE POWER, VP FOR GLOBAL BUSINESS SERVICES, PROCTER & GAMBLE



first spent eight years at headquarters; and Nestlé Italy's Nick Emmanouilidis ran an SAP project in the home office before moving to Italy last year. "I always try to keep a 25 percent expat mix in the headquarters and to lend my staff to affiliates for long-term assignments," says Dispaux.

Sending people on overseas assignments is common at Gillette too, where Zilvitis's senior IT team—which includes a representative from each region and operating company—meets quarterly and always takes time to discuss leadership development. For example, he characterizes Europe right now as a "real hotbed" of activity for Gillette as the company combines some businesses. The fellow who managed the company's Y2K rollover at the Boston headquarters has now been moved to head up the European IT organization. That experience will give him both greater leadership skills and a broader international perspective, says Zilvitis.

One danger of the overseas posting is a botched homecoming. "Integrating people back in is a very big challenge," says Allen Morrison, associate dean for executive development at the Ivey Business School of the University of Western Ontario and coauthor of *Global Explorers: The Next Generation of Leaders* (Routledge, 1999). "When they go overseas, they often wind up in significant positions of responsibility...then they come back

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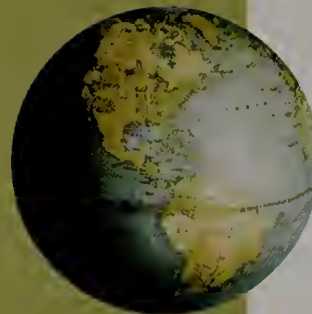
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MERITocracy

The traits of global leaders, in a word

In studying how software companies have succeeded and struggled in using international teams to collaborate across borders and time zones, Erran Carmel, an associate professor at American University's Kogod School of Business, has made an acronym out of the word merit to define the qualities that make successful global leaders.



MULTICULTURALIST — someone who can switch behavior from culture to culture, depending on what is appropriate.

ELECTRONIC FACILITATOR — someone who is skilled at managing and leading via electronic tools such as e-mail, telephone conferences and collaboration tools such as Lotus Notes.

RECOGNITION PROMOTER — a manager who knows he or she has to go to headquarters, ensure that the work the team is doing is being recognized and get resources needed to keep the team rolling.

INTERNATIONALIST — this is different from being a multiculturalist; it's having a breadth of knowledge relevant to the country or region in which one is working, knowing about its history, politics—even following the local cricket games.

TRAVELER — someone who can endure a lot of travel and do a lot of effective communicating not only in formal business settings but also between meetings and over meals.

—E. Heichler

home and it's 'Geez, what have you been doing?' Sometimes they come back with no specific job assignment, and the perks (cars, housing allowances) of living overseas are gone." The biggest frustration for returning expats, according to Morrison, is that they have learned so much and nobody cares—and the result is that as many as 25 percent quit in their first year back. It's a sorry loss for companies to squander these staffers who have just added valuable international perspective to their leadership arsenal.

... And Send Them Next Door for Business Experience

It's not just international experience that can help to season an IT professional for leadership. Sometimes it's getting out of IT altogether for a while that provides the finishing touch—the necessary business acumen that so many CIOs are seeking in their global leaders.

IT executives must be able to step outside the technical point of view and understand the company's business objectives, says Norman McEachron, vice president of Gartner Consulting in San Jose, Calif. And the kinds of people who make good leaders in the new global economy may not be the same as those who used to succeed in IT, he says.

Globalization means that "people who focus on internal things might not have the necessary understanding of stakeholders and customers," McEachron says. "We've got a whole generation of people used to administration and systems upkeep, and acquisition of infrastructure. Now we have to look at IT as deployment of competitive tools."

Gillette's Zilvitis agrees. "The people it'll take to drive IT the next 20 years are very different from the people it took for the last 20 years. Now you need balanced skills." To develop those skills in its own managers, Gillette not only assigns individuals to overseas posts but also moves them among IT, marketing, manufacturing and finance—in the process creating tech-savvy business managers and business-savvy tech managers.

Back at P&G, Passerini values the "keep-'em-moving" approach to leadership development that, during his 19 years with the company, has taken him to five countries and immersed him in many facets of the business. "Moving people around gives them the opportunity to get exposure to different cultures and different businesses," he says.

But in the end it all comes down to one thing when you're looking for the next person to lead a global team, according to Passerini. "What makes a leader? In my experience the one common characteristic is business understanding. It's the only thing that really matters." **CIO**

Elizabeth Heichler herds talented cats in Tokyo, Hong Kong, Singapore, Paris, London, Brussels, Boston, New York and San Francisco in her day job as editor in chief of IDG's international technology newswire. Share your thoughts on leadership with her at elizabeth_heichler@idg.com.

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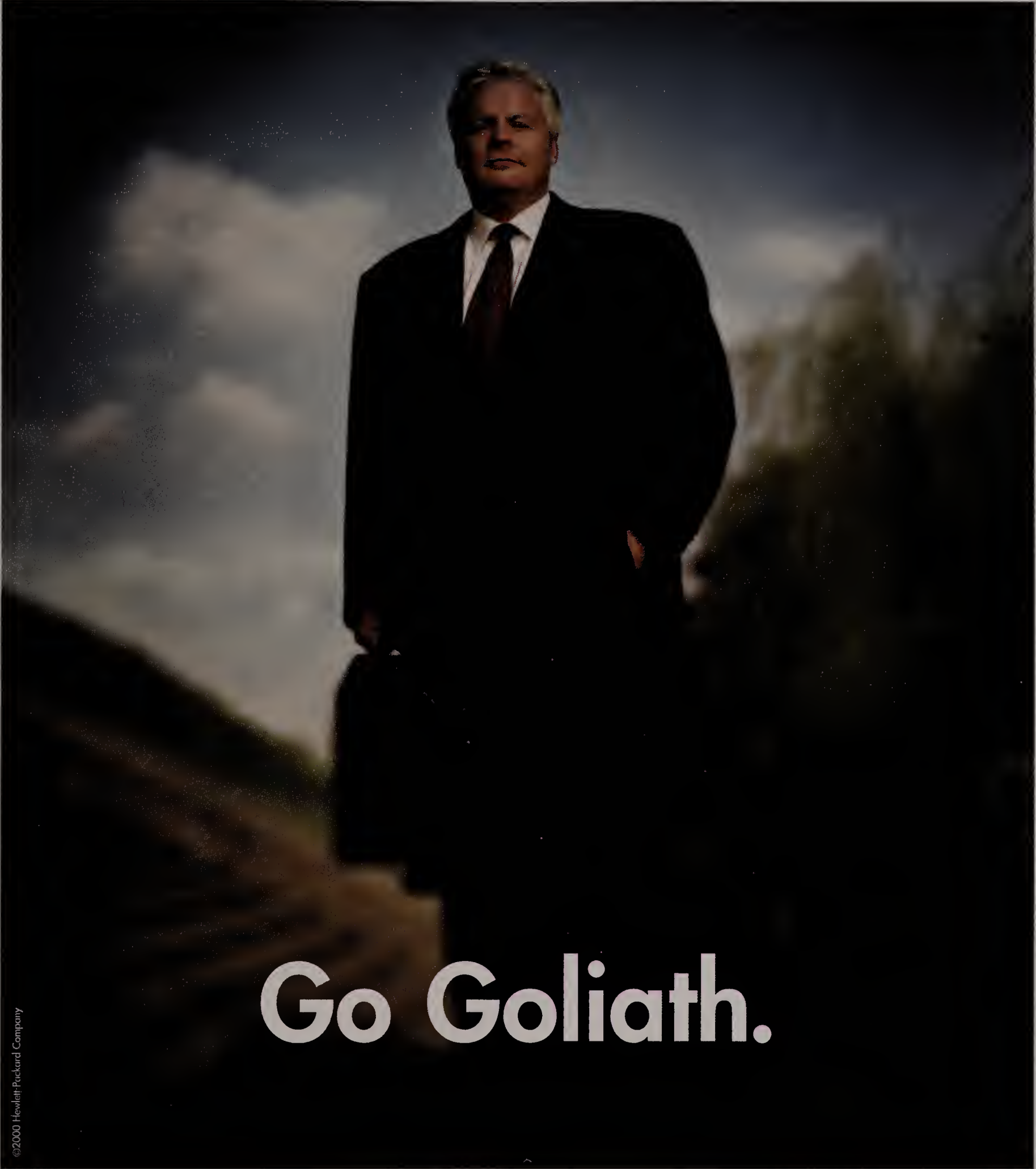
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Kathryn Grant, senior manager of Internet strategy at The Sharper Image, wants buyers to enjoy the online shopping experience.



Consumers won't drop big bucks on pricey gadgets that they can't see first, so at The Sharper Image, even online shoppers get to "experience" the merchandise

LOOK Sharper

BY DEREK SLATER

Books, movies and CDs—low-cost commodities—are relatively easy to sell online. People don't seem to mind buying them from afar, with only a picture to go by. At the other end of the spectrum, you might find funkier merchandise, unique and somewhat pricey stuff, such as the \$329.95 ionic air purifier purveyed by The Sharper Image (TSI), a San Francisco-based specialty retailer. Products like these can be a tough sell on the Web, partly because of their uniqueness and partly because of their price tags. Before handing over their credit cards, consumers want to inspect these items, pick them up, turn them on, try them out. That's all part of

the experience TSI's retail stores have offered for years, and today the company seems to have mastered selling its specialty wares online, too, at www.sharperimage.com. Indeed, TSI's Internet sales increased by 479 percent, to \$28.5 million, in its last fiscal year. *CIO* Executive Editor Derek Slater recently spoke with Kathryn Grant, senior manager of Internet strategy for TSI, about how the company overcomes the "touch issue" when selling online, how it matches its Web efforts with TSI's brand image, and the interplay between the company's online, catalog and store retail channels.



CIO: How important is touch when you're determining how to present products on your website?

Grant: The Sharper Image retail stores are known for the fun of going in and being able to turn something on—to sit in the massage chair and feel it on your back. It's not just touch—there are other elements that are important as well, like sound. A lot of our products have sound, and if you don't present that experience to customers in the right way on the Web, they might think it's sort of white noise. These issues are very important, I think, to the experience of The Sharper Image.

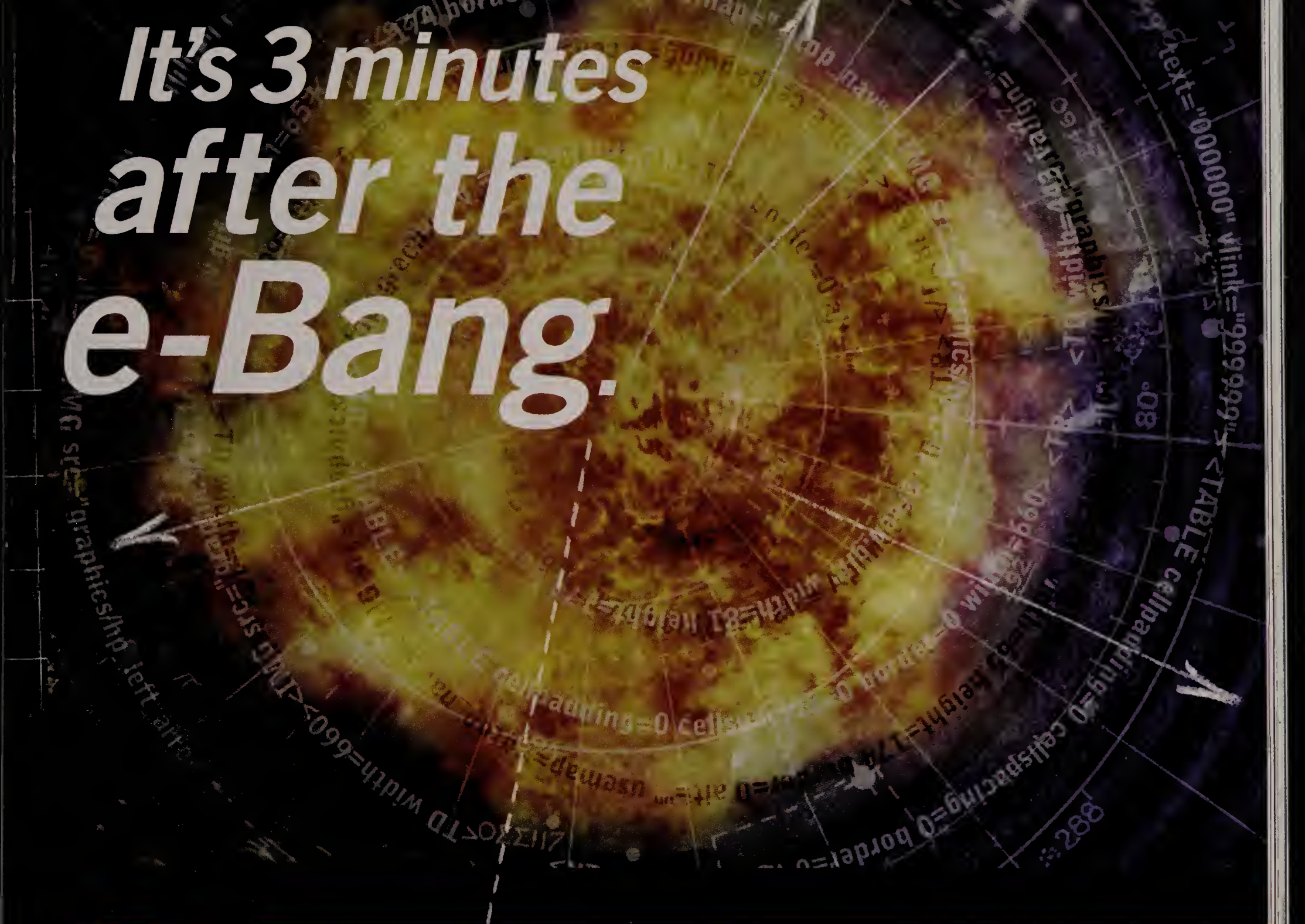
We've incorporated the ability to not necessarily touch but at least to turn something on and experience what it would be like to actually play with the object, to listen to the sounds, to turn it around, to open it and close it. A great example of one of our products that we have rendered in 3-D is our CD/radio alarm clock with sound soother. On our website, you can actually open up the product, insert a CD and listen to the first 30 seconds of the CD. You can also try out the sound soothers. So [sensory and tactile issues] are very important, and I think

we've come as close as possible to a live experience without the customer actually being able to pick up the product and move it around.

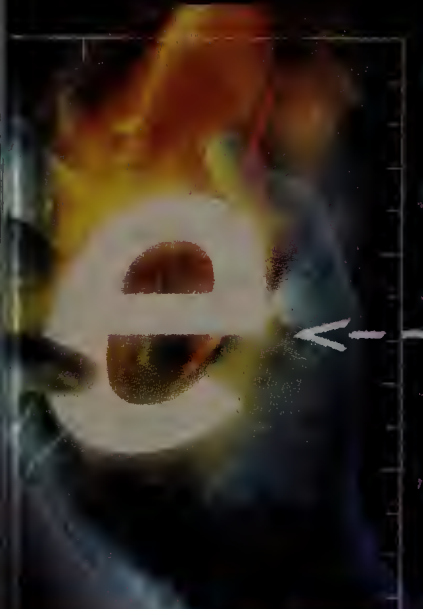
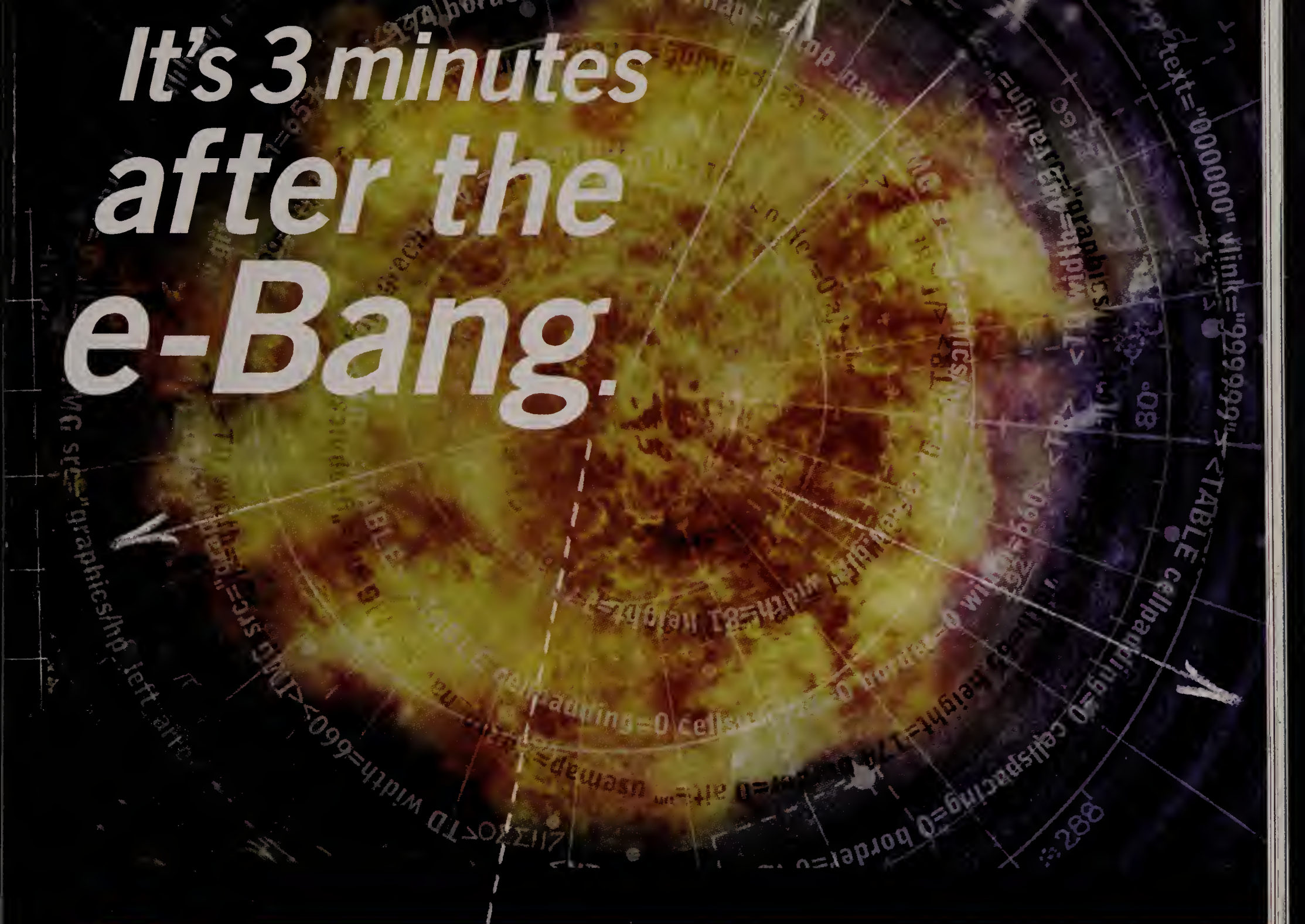
What tools do you use to create 3-D online interactions?

The process starts with a company called Viewpoint Digital [based in Draper, Utah], which is a Computer Associates company. Viewpoint renders the images based on 3-D CAD designs that we provide. They use a product called 3-D Dreams by Shells Interactive to animate the images, and 3-D Dreams works with Macromedia Shockwave to render sound and movement. The 3-D Dreams plug-in installs automatically when you view 3-D products on our site.

A website affects a corporate brand image, whether positively or negatively. Hip, high-tech, fun, leading edge—judging by your stores and your merchandise, those are values I presume you want to associate with your brand. Having the cutting-edge stuff on your website can affect TSI's brand image, regardless of how it's affecting the par-



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ticular experience of examining an individual product. So how much does that play into your thinking?

We want to create the idea that The Sharper Image Online is a place to check out the latest, coolest Web technologies and how those tools can be used to display products effectively. So I think it's very much a part of our decision making in incorporating fun and interesting technologies.

We had a product for Valentine's Day, for example—a butterfly that opens and closes its wings. The product moves based on the movement around it. So if you walk by it, it will react through sensing your movements. The way the product worked on our homepage, you could actually see it opening and closing. So we definitely try to drive a visual appeal that people haven't necessarily seen on other websites.

Isn't there also some risk associated with cutting-edge Web technology? You don't want every new page to require a new browser plug-in, and you certainly don't want something to be broken on your website. What sort of evaluation process do you have to make sure a technology really works?

That is a very, very important aspect of choosing partners to work with, or choosing technologies that are useful for your website but fun at the same time. For instance, around the time we decided to have 3-D content on our website, Intel came to us [because the company] wanted to feature its 3-D capabilities. Well, we knew that we were going to be working with the leader in the technology space by partnering with Intel. So we were taking a risk and being one of the first retailers, but it was a very intelligent and calculated risk because we were partnering with an extremely experienced and reputable company. There's a lot of testing involved before putting anything up on the website. The 3-D content testing was a lengthy process.

What lessons or techniques have you learned in your catalog business that you've been able to transfer to your website?

For starters, 30 percent of our revenues right now comes from Sharper Image-designed products. Our company has transitioned from a company that carries other people's very cool, latest, high-tech electronics to one that actually develops products itself. When we're coming up with a new product, the goal is to create not only a very interesting product but one that has a lot of visual appeal so that people can really be excited by it when they're looking at it in a catalog. Or when they walk into the store, they see, for instance, that our CD/radio/alarm clock comes in a gorgeous cobalt blue color as well as a beautiful mahogany. So the products are designed to be attractive.

Then we have created a gorgeous catalog with a very precise, very artistic approach to the photography. We have great photographers and writers. These competencies transfer very effectively to the Web, which, until recently, was two-dimensional

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like a catalog. Now we have the benefit of taking it far beyond a catalog and making it an interactive experience.

How do you bring that expertise in catalog presentation into your Web efforts? Is the Internet division a separate entity, or does it borrow talent from catalog development?

We decided that instead of creating a separate dotcom company, we would be able to make a much more seamless experience—not only for our customers but internally also—and really benefit from the [retail store and catalog] channels by allowing SharperImage.com to be a part of the entire Sharper Image Corporation. So the catalog, the retail stores and the website all work together. Therefore, we are able to use on our website not only the artistic elements that we have in the catalog

new products? And have you thought about bringing Web-based informational kiosks into stores to help answer customers' questions?

We have considered kiosks. It's something that we revisit frequently, but we have not yet decided to implement them in our stores. There have been some success stories [for other companies], but I'm not sure that the technology is totally there. It takes a lot of work to prepare every single store for a kiosk. You need to make sure when you're setting up a kiosk that you're creating something that is going to be easy for your customers to use. That means potentially bringing in DSL, things like that, because we don't want customers to be slowed down by technology that we're using to help them.

Regarding whether we are using the Web as a testing ground

We don't want customers to be slowed down by technology that we're using to help them.

but, even further than that, our 22 years of fulfillment in distribution expertise. Retail store, online and catalog orders are fulfilled out of the same distribution centers.

Last summer, we prepared our fulfillment centers to handle the sales that we anticipated during the 1999 holiday season. We wound up having a 500 percent increase in sales on the website over the 1998 holiday season. So we started beefing up our distribution center back in July. We also hired a third-party fulfillment center to handle the larger ebbs in traffic or orders.

How is the Internet division represented when strategic decisions are being made by top executives?

That's a great question, and it gives me a moment to have some bragging rights. Our CEO, Richard Thalheimer, insisted that we get on the Web back in 1995. He is extremely involved in all of the decision making for our website. It's really his baby, I think, next to the TSI design products, which, as I mentioned, we manufacture ourselves. So there's a large focus and a real interest in making this particular channel a success. Our CEO, our COO, our head of technology, our head of creative—they're all involved in the decision making when it comes to anything from how we make it visually appealing to whom we partner with on the technology side.

So far, we have been talking about taking the expertise developed in catalogs and retail and bringing that to your website. How about the reverse: Do you use the website to test-market

for products, that's another thing that we're starting to look into. We started an online auction back in March of 1999—you can get to it from our homepage. There, we offer brand-new items, one-of-a-kind products as well as repackaged and refurbished items. This follows our idea that we want to be leading edge. There are very few retailers out there that have an auction site. It might be a place we can start using to test products and to decide, "Hmm, customers are really reacting positively to this particular product. Should we bring it into our catalog or stores?"

The capabilities of the online medium are always changing. What might the online shopping experience be like down the road? Will we have a little automated, robotic assistant guiding us through your website?

Sure. We've actually started exploring those types of technologies. For instance, one idea is sort of a morphing assistant that can travel around a site with you and share ideas about products. We've looked at that.

We're exploring [technologies] other than 3-D for displaying products in a very visually appealing, very technically advanced and precise way. I think right now it's a question of making sure that these are technologies that are really useful in the shopping experience. That's our focus. **CIO**

Executive Editor Derek Slater's office probably could use an ionic air purifier. Ask him about it at dslater@cio.com.



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THE WAGES OF Sim

BASF is turning its IS people
into business people through
a board game called Tango

BY MERIDITH LEVINSON

Reader ROI

- ▶ Learn how one company is repositioning IT as a strategic function
- ▶ See why simulation is an effective tool for teaching business skills

"LET'S GET READY TO RUMBLE!" With this boxing-inspired call to arms, 20 IS managers rally in the middle of a conference room at BASF's palatial North American headquarters in Mount Olive, N.J. These middleweights are not about to fight, though they wring their hands with Machiavellian cunning. There's no boxing ring; they gather around a long table littered with snippets of paper printed with people's names and photographs. These represent the talent that managers

desperately need to recruit to staff projects already in motion. If they don't get the people they need, the projects won't get done. They'll lose customers, and they'll lose respect—oh, and money too.

These individuals are in the midst of Tango, a business simulation designed by Celemi, a Swedish business improvement consultancy that develops products for organizational learning. The simulation is played like a board game where five teams of four run their own startup companies. Each team has its own board around which players move cards and plastic coins to track their organization's finances, standing in the marketplace, progress on projects and R&D investments. These organizations have limited cash, and their success depends upon the teams' ability to both manage their com-

PHOTOGRAPHY BY EDWARD SANTALONE



Andrew Pike, senior vice president of IS, began a crusade at BASF to elevate IS managers' skills into the realms of business.

pany's intangible assets (employees, image and R&D), and define and follow strategies that will lead to success.

The Tango simulation concludes the chemical manufacturer's three-week Leadership Academy, a development program for the company's senior IS managers. The goal of the course is to make the participants more like business consultants and less like techno geeks, according to Andrew Pike, senior vice president of IS at BASF.

Like many companies, BASF's IS group has carried the cross of being a cost center. Only in the past three years, as the Internet has begun to shake up the tradition-bound chemical industry has this perception started to change and BASF's senior executives have begun to understand, at least in theory, the importance of IT.

In the meantime, morale in the BASF's IS department has remained depressed. IS managers still face tight budgets and battle to get support from business managers for IT projects. The Leadership Academy is one company's attempt to heal the stigma of inadequacy afflicting many IS organizations by giving its managers a crash course in business management, showing them IT's fundamental role in the prof-

itability of the company and having them develop new IT projects in which they can apply their newfound consulting skills.

Tango: The Premise

"What you're about to experience is a world where you're running an organization that faces many challenges," says Brent Snow, a partner with 3D Learning, based in Syracuse, N.Y., the company that helps Celmi facilitate several of its simulations.

Snow's role is to connect the simulation to the reality these managers face every day. He asks them, "What's your current role? What's a significant challenge that you face?" Padma Konakanchi, who develops applications for its Internet and intranet sites, volunteers, "Saying 'no' to customers who want fancy gadgets and aligning new technologies with the rest of BASF."

"Phasing out legacy systems and becoming knowledgeable in a new system [SAP R/3]," chimes in John Arnold, who's in charge of legacy financial systems. "And balancing between maintaining [an old capability, R/2] and creating a new capability [R/3]."

"Putting a new team together to work on R/3 and managing the existing systems," says Joe Tibaldi, manager of finance and administrative applications and the business systems planner for finance.

After these introductions, Snow explains the premise of the simu-

Leadership Academy Stats

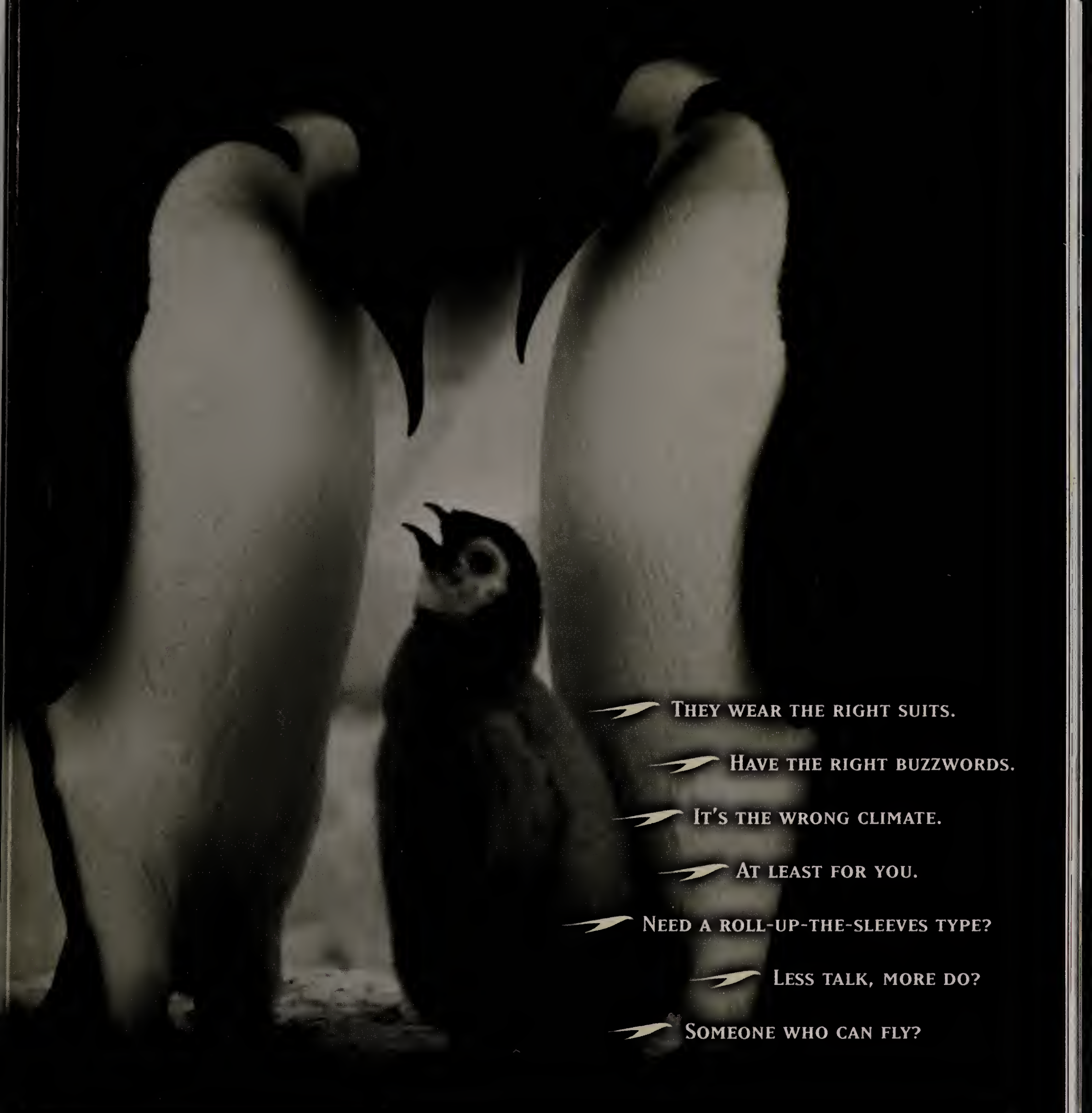
Goal To improve the perception of IS within the department and the company by making senior managers better business consultants

Number of participants 110

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Corporate Training

lation and how it works. "These companies [Alpha, Beta, Gamma, Delta and Epsilon] create a knowledge-based solution," says Snow. He means that the product or service they provide depends entirely on the knowledge of the employees who develop it and the processes that support the way it is delivered. The language and ideas in the simulation are deliberately ambiguous so that they can be applied to different companies.

This ambiguity makes a few of the participants skeptical of its relevance to a chemical manufacturer like BASF. Someone asks, "How does this apply to us? In manufacturing, value is still weighed on tangible assets."

Snow responds by saying that Tango gives them an understanding of the broader business context of which BASF is a part—an answer that doesn't quite satisfy the ROI-driven IS folks in the room who are sacrificing two days of work while Rome burns back in their departments. They want to know exactly how this will apply to them and to BASF. They'll soon find out.

Let the Games Begin

The simulation follows five years or fiscal cycles, each composed of three periods. During each cycle, companies recruit new employees, look for new customers, work on projects and encounter "clogs," or problems that crop up during the projects. At the end of each cycle, they have to complete and balance an income statement on which they account for revenues, assets and costs associated with R&D, depreciation of equipment, overhead, taxes and interest on loans.

The main purpose of the first cycle is to familiarize players with each step of the game. All teams start with one client and two employees. During this cycle, each team gets another client and another employee, but they still lack enough employees to staff both projects, since both require two people, a team leader and a team member.

Client projects are either challenging or easy, and teams decide which kind they want to solicit based on their strategic direction, which they determine in the second cycle. Snow advises teams to start their most challenging project first for three reasons. First, it brings in more money. Second, employees learn more from it and thus increase their skill levels. Finally, it increases the company's image if it is completed with only minor clogs.

Team Beta, composed of Business Systems Planning Manager Steve Belej, Team Leader of SAP R/2 and SAP R/3 Interface Support Groups Don Kluse, Supervisor of Data Warehousing Tim Macrae and CIO Staff Writer Meridith Levinson, does the best it can to staff the project for its challenging client, Spica. Tango emphasizes the importance of matching certain employees with certain projects based on an employee's skill level, work style and potential. The cards representing personnel indicate whether someone has high or low potential and are marked with a shape (circle, square or triangle) to indicate his or her work style.

Likewise, the project cards indicate whether a client is challenging or easy as well as the work style that will best suit them. Numbers and shapes are used to designate skills and style, respectively. While

Birth of an Academy

On arriving at BASF's North American headquarters in 1997, Andrew Pike, senior vice president of IS, made resurrecting the demoralized IS group one of his first orders of business. He charged Michel Vitiello, the manager of organizational development for the IS group, with designing and coordinating the Leadership Academy. Vitiello worked with Development Dimensions International in Pittsburgh, the company that provides BASF's training, to devise the content of the program. The program is based on results of a 1996 survey that the IS group gave to its customers about its role and performance in the company. Findings revealed a need for a consistent approach to managing and developing IS employees, and highlighted three areas in which IS managers needed improvement: people management, customer focus and understanding the business from a financial perspective.

The key components of the Leadership Academy that drive home the content are the real IT projects the managers develop.

One such project is an effort to extract data from a purchasing system called technical systems purchasing, which contains information on the resources needed to build a chemical manufacturing plant and add it to the enterprise data warehouse. Jacqueline Saunders, a project manager in BASF's IS department and graduate of the Leadership Academy, is working on this project and sees how it can positively affect the company: "It's only by using data and translating it into information that businesses can monitor their performance and make improvements to it. The data we collect can identify process improvements that can lead to cutting out costs."

Vitiello is getting ready to roll out an adapted version of the Leadership Academy for all IS employees in Mount Olive. And if that isn't enough, he is also adapting the curriculum for the company's IS operations (and possibly parts of logistics and finance too) in Latin America and Brazil, to be taught later this summer. He might find himself doing the same thing in the fall for Worldwide IS, starting with Germany, as executives there review the program. Kurt Bock, BASF's executive vice president and CFO, is implementing the program to his entire administrative staff of 650.

—M. Levinson



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Corporate Training

the numbers and shapes don't translate into real-world qualities, for the purposes of the game they have to complement and match each other. The Spica project requires a team leader with a skill level of two and a team member with a skill level of one. Both employees have to have a square style for their chemistry to suit Spica's. Team Beta's three employees are Gardelli, Faulkes and Adams. Gardelli fulfills the criteria for the team leader, but Beta doesn't have a single square employee. Constrained resources force the team to put Faulkes, a single triangle, on the Spica case.

The emphasis on work styles harkens back to the first week of the Leadership Academy, which focuses on developing management skills. Managers received personality tests and 360-degree feedback in a series of seminars and workshops. Designed by Michel Vitiello, manager of organizational development for the IS group, and Development Dimensions International in Pittsburgh, the company to which BASF outsources its training, the program teaches IS managers the importance of understanding different personalities in order to create productive work environments and to be better coaches to their direct reports.

Beta put Adams, its other employee, who has a skill level of one and a triangle work style, on an ad hoc project because it is an easy way to generate revenues, albeit small ones. As Beta and its competitors progress through each period in year one, they move project cards across the board. Around the room, players sigh with relief (some cheer) every time they finish a project and deposit a few coins into the accounts receivable area on the board. When they have to pay salaries or fees, they wince at seeing their cash dwindle. It may look like a game, but the pain of losing money feels real.

During the second period, Beta runs into its first clog. The costs of these snafus depend on whether employees have good chemistry with the client company. In other words, if a team has matched the styles and exceeded the competence levels required by the client, the clog will be easy to resolve. By contrast, if a team hasn't matched



A companywide survey, outside training providers and the vision of Michel Vitiello, manager of organizational development for IS, led to a program worth repeating.

styles or exceeded skill levels, the problem will be more difficult, and it will cost your company more money. Beta's clog costs it two coins, which is the average amount.

At this point, Snow stops the action and asks the participants, "What are the clogs in your [BASF] world?"

"Inadequate resources," says Ramesh Thadani, who's responsible for the support of the SAP logistics application.

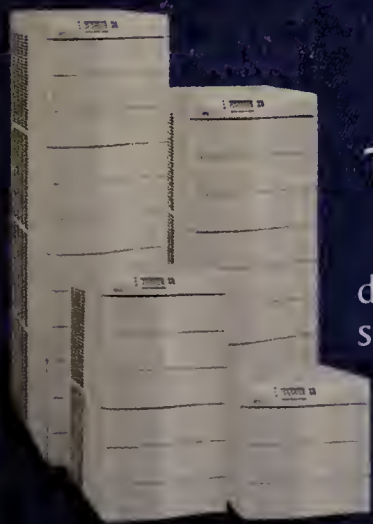
"Changes in schedule," offers Clifford Rimpo, the customer liaison responsible for making sure that IS's solutions provide the best possible support for its customers.

"Fiber-optic lines cut outside the plant," says John Merten, manager of network application support.

Snow highlights how these unexpected snares can have either a positive or negative impact on the image of a company or IS organization. He offers the example of how Tylenol actually enhanced its brand image during the cyanide scare of the 1980s because it reacted so attentively to a potentially devastating problem. The impediments Thadani



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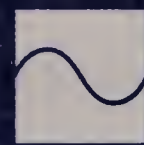
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and Rimpo suggest often make or break a company's perception of its IS organization. If the IS group manages to deal with these problems, it looks good. If not, well, that's a hard reputation to overcome.

The managers in BASF's IS department certainly understand how clogs affect their image, given how the department has historically been perceived within the company.

Image Is Everything

"They're the service people," says Debbie Shapiro-Ross, manager of business planning for BASF's chemical intermediates group, explaining an opinion of IT that has prevailed in the company but is beginning to change. She was one of three BASF employees who presented an overview of their groups' business operations during the second week of the Leadership Academy. That part of the program focused on teaching the IS managers how to diagnose problems and develop appropriate solutions for their internal and external customers.

"The biggest issue in the past was always that the business groups didn't get what they asked for [from IS]," Shapiro-Ross says. "I think this is true in a lot of companies. As a service group, you're there to understand what the person who's paying you needs."

Back in the simulation, Snow lectures: "One of the challenges that does affect your world is your attitude that you're just down in the basement taking orders. Is that really what you're doing, or do you have the opportunity to subtly—or not so subtly—influence what happens in your organization? If you're just taking orders, then why do this leadership thing?"

"One of the themes [of the Leadership Academy]," says Pike, "is to try to convince the IS people that they are a mission-critical element of this organization and have a direct ability to influence its overall profitability. My expectations [of the Leadership Academy] are that we provoke IS people into new thought processes, whereby first they perceive themselves as being important to the company, and second they actively take up a new role which is more business consultative in style than providing bland technical-type solutions."

Pike acknowledges that getting the IS people to understand the positive impact they can have on the company has been one of the biggest challenges he's faced since coming to Mount Olive two and a half years ago from a BASF site in Singapore, where he served as IS director. In fact, he says convincing the IS people of their impor-

tance has been harder than convincing his executive-level peers. Life as usual in the trenches seems to have kept them from sensing the new regard with which executives hold their role.

"This [perception] has changed in the last year," says Pike. "We now receive invitations to the business units' operating committee meetings. In the past, right about the time I turned up here, we had very few people being invited to these types of discussions." Now that representatives from IS are welcome, even expected, at these meetings, Pike has to make sure that they can stand and deliver.

He believes that this change in attitude among business executives is due in part to new leadership within the company and a paradigm shift within the chemical industry.

During the past two years, BASF has welcomed a new chairman, Peter Oakley, and a new CFO, Kurt Bock (plus Pike's own new blood shortly before that). Pike explains that the new management is part of an ongoing effort to consolidate a number of businesses BASF acquired in the 1980s into one worldwide organization and aggressively assert its position in the North American marketplace.

"The competitive nature of the chemical industry has changed radically during the last few years," he says. "There is increasing competition and consolidation. Suddenly IT has become a central function to these companies."

Now that Pike has converted those former nonbelievers to the persuasion of IT, he's got to spread that gospel among his 350 disciples who form the biggest department at the Mount Olive site—and who are bitter that in spite of their size, they're relegated to the basement of the recently-refurbished building, where the odor of tuna fish from the adjacent cafeteria permeates their quarters.

Back to Tango

During the second cycle of the game, teams set their strategies, and competition for personnel and customers heats up. Snow directs everyone's attention to a wall on which brightly colored charts and tables have been taped. One chart shows a graph with four quadrants, each designating a particular market in which a company might position itself. One quadrant, for example, represents large organizations that offer one-size-fits-all solutions, while a company in the opposite quadrant represents smaller, boutique companies that provide customized products or services. Snow gives each team five min-

"The competitive nature of the chemical industry changed radically.... Suddenly IT has become a central function to these companies."

—Andrew Pike, senior VP of IS, BASF

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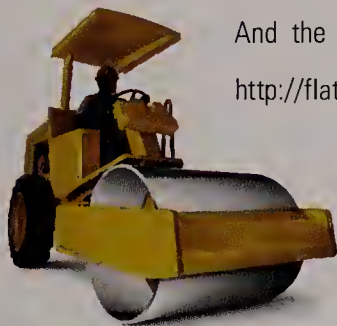
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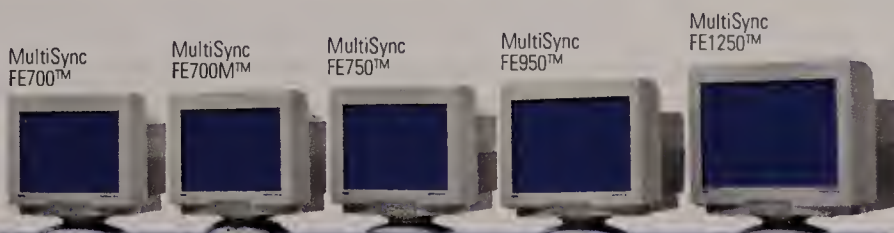
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utes to devise a strategy for its company and place it in on the graph.

Beta hashes out a strategy. Tim Macrae and Steve Belej have differing visions of what their company should be. "You have to play extremes in this game," says Belej, nudging the team toward producing cookie-cutter solutions for a large market. "You have to have balance," counters Macrae, who thinks Beta should stake out another area where it would grow to be a medium-size organization with moderately challenging customers. Beta finds itself building a strategy based on what other teams are doing and opts for Macrae's vision. Little

Gamma, which recruited eight people that cycle, grew way beyond its infrastructure and incurred huge costs. It didn't post its earnings on time and lost points. Nonetheless, it had used employees wisely. "In manufacturing, you tend to think of people as costs," says Snow. "But Gamma made a lot of money off its employees because it trained them and put them on R&D and ad hoc projects."

Delta remained in the same position at the end of the year. Epsilon moved closest and fastest toward its strategic direction. In one year, it grew to be a midsize organization with six employees and 75 per-

"IT talent is such a critical resource, your people are your customers."

—Brent Snow, partner, 3D Learning

did the players realize that it would take them into the gutter.

Alpha, Delta and Epsilon aim to become big companies with challenging clients, while Gamma chooses the economy of scale—McDonald's—model. Now everyone is ready for the second round of recruiting, which is key to getting off on the right foot in order to pursue strategic goals.

Beta desperately needs to recruit a high flyer named Farley to staff a new project. Beta managers offer her a bonus when they make their bid. It's a good thing, because another team wanted Farley too. Hustling to keep money flowing into the company and to staff projects, Beta puts Farley on a less challenging project, forgetting the importance of giving high-potential employees like Farley tough work. When Beta players determine their performance in the third period, they are penalized for ignoring this match. According to the rules of the simulation, employees who do not reach their career goals resign. Beta is short staffed once again.

"In this profession," Snow interjects, "IT talent is such a critical resource, your people are your customers. If you don't meet their expectations, they'll walk." Earlier, he asked participants why they're working at BASF. The vast majority of them answered that they were there because of the challenges.

The second cycle ends, and the room hums with the sound of all the teams crunching their year-end operating results. Some celebrate with applause and cheering; others, like Team Beta, brood silently.

Beta is the first to post its results. Though it lost an employee, it managed to increase profits. Its projects will bring in revenues during the first period of the third cycle, which puts it in good position.

Alpha had the biggest client portfolio, but because it didn't have enough staff to support them, two clients left. One Alpha team member comments that his team's scenario most accurately reflected an IT shop because it had more clients than it could handle.

cent of its customer portfolio composed of challenging projects.

Each successive cycle proved a bumpy ride for the teams as they struggled to staff projects, recruit top-notch talent and keep the funds rolling in. At the end of five cycles, Gamma emerged triumphant and achieved its strategic intent of mass production. Delta came in second place and Alpha in third, while Epsilon and Beta tied for fourth.

Game's Gains

Of greater importance than how their company ranked is what they learned from the simulation—exactly how important and difficult it is to set a goal, allocate the resources they'll need to meet it, be flexible enough to adapt their plans if the competitive landscape shifts and communicate these changes and plans to all team members.

Tango provides a meaningful context in which the participants can apply what they learned in previous Leadership Academy sessions. But the buck doesn't stop there. After the Leadership Academy, these IS managers are expected to approach IT projects that they devised during the first week of the Academy with their new skills. These projects (which range from identifying all information systems and the managers who are responsible for them to extracting data from a purchasing system and adding it to the enterprise data warehouse) give IS managers a chance to see exactly how their efforts impact BASF and allows them to be leaders within their department, the company and with external customers.

Andrew Pike sums it up: "Being a leader is not so much about having 150 people behind you, but about having passion, taking the initiative, being creative and pushing this organization to think of brand-new ways to approach the chemical business." **CIO**

Only slightly chagrined by her team's Tango performance, Meridith Levinson invites your comments at mlevinson@cio.com.



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The Power Between.



Carlson's CIO Dave Zitursky says his company will give customers the same high-level service whether they seek help on foot or online.

That's the Ticket

BY MATT VILLANO

Technology is threatening to put travel agencies out of business. Could it also save them?

Years ago, **Chicago-based McCord Travel Management** oversaw travel policies for its 2,000 corporate clients from a network of call centers. Business travelers who needed to know if their plans complied with their company's policy had to submit requests by fax, and agents wouldn't respond for 24 to 48 hours. Clients found this waiting period annoying, says Paul Craft, McCord's vice president of technology, and they pleaded for improvement.

Today, to the delight of its customers, McCord's policy analysis process takes mere minutes. By combining third-party and proprietary technologies, the company has launched a Web application that queries a client's travel policy as the traveler is booking a trip. If the proposed itinerary adheres to the policy, the traveler can go ahead and book a ticket; if an itinerary is no good, the

Reader ROI

- ▶ Find out how IT has transformed the travel industry
- ▶ Discover how travel agencies are responding to the threat of disintermediation
- ▶ Learn what's ahead for travel technology

PHOTO BY STEVE WOIT/MILLENNIUM PICTURE GROUP



McCord Travel Management sped up its services in response to customer feedback, says Paul Craft, VP of technology.

application will suggest alternatives that work and then wait for a reply. Craft says that with the help of a data-mining tool, corporate travel managers can also use the application to generate reports about travel expenses for individual employees, departments or the whole company.

"There's no reason for any of our clients to wait to receive this kind of information," says Craft. "You want these reports? Now you can have them whenever you want them. It's our way of saying that we, as an agency, understand things have to change."

Welcome to the new world of travel sales, where historically low-tech travel agencies

are realizing that change is the key to survival. Internet companies, as well as airlines and other travel suppliers that offer online booking services, are pushing them out of the market. In 1999 alone, corporate travelers dropped more than \$7 billion on travel expenses online, according to PhoCusWright, a Sherman, Conn.-based research company that specializes in the online travel industry; the company released a study last winter that predicts the online travel market will reach \$20 billion by 2001.

These numbers present a formidable challenge for shops that have existed offline for years. Since 1995, the number of travel agen-

cies in the United States has dropped from 47,000 to just over 43,000 today, according to Airlines Reporting, an independent travel research company in Arlington, Va. Stephanie Kenyon, vice president of industry affairs and travel technology for the Alexandria, Va.-based American Society of Travel Agents, says that her organization has seen its overall membership, which includes travel agencies, suppliers and other industry representatives, grow in the past five years, but the number of agencies in the group has shrunk. Kenyon says the two-pronged menace of dwindling commissions from airlines and the proliferation of Internet competition

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has forced travel agencies to ask themselves if they've outlived their usefulness. "Travel agencies had dominated this space for so long that the change took a lot of people by surprise," she says. "Many people aren't sure where to go from here, and I think a lot of them suspect technology is the answer. Is it? I don't know. There are still a lot of things a travel agent does for a customer that can't be done on the Web. It's up to our agencies to figure out what those things are."

Travel agencies are responding to the threat of disintermediation with solutions ranging from high-tech to no tech at all. Some have embraced IT, developing proprietary applications and partnering with Web-based entities to procure more sophisticated booking software. Others, generally smaller companies, have eschewed technology altogether, opting instead to provide fee-based specialty services such as ecotours, gay- and lesbian-oriented travel programs and adventure vacations that they hope will make them viable niche players. Still others have tried to do both, bolstering their online and offline offerings in an attempt to keep customers satisfied wherever they might go.

Reversal of Fortunes

Technology transformed the travel industry once before. In the late 1950s, airline technologists realized that the batch-oriented processing systems they had used to organize reservations couldn't keep up with rising demand (see "Time Travel," Page 220). The industry developed an application, dubbed the Transaction Processing Facility (TPF), that could track reservation data in real-time, transmitting as many as 7,700 messages per second. Other travel sup-

pliers, such as hotels, cruise lines and rental car companies, soon followed suit.

By the early 1970s, suppliers had rewritten many TPFs for travel agents and renamed them Global Distribution Systems (GDSs). For a small monthly fee, suppliers gave agents unlimited access to these booking systems, counterbalancing the fee by offering them a 10 percent commission for every sale they made. This was a cash cow for travel agencies; some earned hundreds of thousands of dollars every week in commissions alone.

Then in the early 1990s, the landscape changed forever. To contain costs, travel suppliers divested their GDS applications and took a chunk out of agency commissions. From 1994 to 1998, average commission rates dropped to 5 percent and lower, cut-

ting the amount agencies earned per sale from as much as \$80 to as little as \$5. Soon agents were paying for GDS service per transaction instead of per month, leaving many fighting to stay in business. Desperate for revenue, some charged their customers processing fees; others resolved to operate at a loss.

Meanwhile, Travelocity broke onto the scene in 1995, and Microsoft's Expedia followed one year later. Both offered customers direct access to a bevy of GDSs, circumventing intermediary fees and thereby lowering prices. PhoCusWright statistics show that by the beginning of 1997, more than 2 million travelers were regularly paying for trips online.

"I'm not going to lie—the situation was pretty dire," says Kenyon. "All of a sudden, agencies turned around to find their revenue



Stephanie Kenyon of the American Society of Travel Agents points out that while her group's total membership is rising, the number of traditional travel agencies is declining. Internet competition is partially to blame.

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At American Express Travel, Henry Blinder says the number of daily bookings per agent is soaring thanks to a new Web application.

streams severely threatened. For some—especially the smaller ones—it was a real struggle.”

The Search for Solutions

To increase revenue, New York City-based American Express Travel Related Services, the travel arm of the credit-card giant, turned to technology. In late 1997, the company replaced its phone-based reservation system for corporate clients and launched Corporate Travel Online, customizable mining software that queries different databases, finds the cheapest rates available, then lists them on the Web. Agents in any

of the company's 1,700 offices worldwide can access the system, as can individual corporate travelers. Henry Blinder, vice president of interactive technology, says the system has quadrupled the number of bookings agents can take in a day. And because the site presents clients with a list of the cheapest travel options, they can save an average of 20 percent.

One of those clients is Dallas-based semiconductor company Texas Instruments (TI). Travel Technologies Manager Melissa Lopez says TI signed up for the service right after it debuted, and the results have been encouraging. Major deals and new business have

increased TI employee travel volume by 33 percent. At the same time, TI's travel department hasn't had to expand and, as Blinder predicted, the company has shaved nearly \$2 million off its \$15 million annual travel budget. That has freed up money for an internal marketing effort to get more travelers booking online.

Corporate travel comprises only half of American Express's travel business. In 1998, the company revamped the technology that drives the other half: leisure travel. Blinder says this new system, which he calls the American Express Travel and Entertainment Hub, offers online booking to a more gen-

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eral audience. Travelers can use it to book flights, reserve hotel rooms, check out vacation packages and buy tickets to sporting or cultural events. In contrast, the services one might find at the company's storefront locations seem...well, old-fashioned.

"Even the best travel agents in the world aren't going to be able to scroll through 25 booking options," Blinder says. "We think this is where the future of travel will be."

Farther down the East Coast, technologists at Philadelphia-based corporate travel company Rosenbluth International are taking a similar approach. On the leisure side, says CIO Don Otterbein, the company recently purchased Biztravel.com, a Web-based travel agency geared toward small businesses, independent businesspeople and frequent travelers. Among other features, Biztravel.com keeps track of customers' frequent flyer miles and calls or pages them when their flights are behind schedule.

In the area of corporate travel, the company's Web-based @Rosenbluth product uses a homegrown application to help clients find inexpensive flights. On the front end, the program applies the spendthrift principles of airline revenue management to save money for corporate clients. Dubbed Discount Analysis Containing Optimal Decision Algorithms (DACODA), the application advertises good deals, facilitates favorable contracts and helps corporate travel managers decipher complex pricing rules. On the back end, @Rosenbluth is an end-to-end enterprise resource planning (ERP) solution, linking client travel plans to preexisting expense reporting software, HR systems and payroll. Corporate travel managers can use this feature to figure out how much money each employee has spent on travel throughout the year.



Turbulence ahead? Rosenbluth CIO Don Otterbein doesn't think so—the company's recent acquisition of Biztravel.com will help it land safely in the online leisure travel market.

"This whole process used to involve meetings and phone calls, and generally took weeks and months," Otterbein says. "Now, travel managers can set up a corporate account and feel confident they're getting the best deal in a matter of hours. Our technology has revolutionized the way our clients do business." Rosenbluth's statistics support this claim—overall sales have nearly tripled in the past two years, according to Otterbein.

Staying the Course

In Wallingford, Conn., A&S Travel has succeeded by doing what it's always done. The regional agency's CEO, Eric Ardolino, has his own strategy: eschewing the Internet. A sign hanging on the window of A&S's main office reads "We fix Internet

problems," and this slogan gets to the heart of Ardolino's antipathy toward the Web. When customers buy online, he says, there's no sense of expertise, no one to assuage their concerns. Sometimes, he says, even the most sophisticated technology can't replace the human touch. For example, Ardolino's specialty is Australia, and he insists there's no way he can share this expertise in virtual space.

"If you're getting married and you want to see Australia on your honeymoon, are you going to book your trip on some website, or are you going to ask me?" he says. "If you want good, quality information and you want to pick good, quality trips, you need to interact with good, quality people. Not machines, not databases, not any of that. You need people. Period."

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leisure travelers an online booking engine, but when clients book trips on the Web, Ardolino calls and encourages them to come in and discuss their travel plans. He defends his approach as simple economics. If A&S customers purchase tickets online, the company facilitating the booking engine gets the commission. If customers come in to buy tickets or if Ardolino submits the purchase himself, the commissions go to him.

Ardolino's commitment to personal service has paid off: He pulled in \$9 million last year and says he's already ahead of that pace this year. Still, he hasn't made his money on commissions alone. Like most travel agents, he charges a \$10 to \$20 transaction fee per ticket, money he retains as direct profit. Though this fee inflates the cost of most travel, it is usually balanced by the bargain-basement prices Ardolino uses his expertise to procure. A customer recently paid Ardolino \$700 for a three-day trip to San Francisco; online, the same trip would have cost roughly \$1,400. With deals like this, Ardolino insists he can get by on the business he has.

Not everyone believes that, however. Marc David Seidel, a professor of organizational behavior and strategic implementation at the University of Texas in Austin and the founder of Airlines of the Web, the first index of travel sites online, is skeptical that agencies will succeed without using the Web in some way. "You can no longer

ignore [the Internet]," says Seidel. "Not in this industry."

In that vein, some agencies have combined Web endeavors with a renewed commitment to personalized customer service. Dave Ziturs, CIO of Minneapolis-based Carlson Companies, says the new slogan for leisure travel at subsidiary Carlson Wagonlit Travel is "Click, Walk and Talk," which means customers will get the same level of service whether they book online, at an agency or by phone. To show employees they should send this message to customers, Carlson invested in a password-protected Extranet at the beginning of last year that Ziturs says offers agents marketing information, Web-based training, travel brochures and the latest company news, which they use to get customers the best and cheapest deals. He adds that Carlson encourages its 1,200 agencies to log on every day and provides monetary incentives to those who log on most consistently. The Extranet also has eliminated the need for paper communication among the company's offices.

Later this summer, Ziturs says, the company will roll out a new proprietary customer relationship management (CRM) system to make the booking experience more personal. Based on previous travel choices collected and stored in an Oracle database, the system will offer discounts, special deals and other services to repeat customers. When they log on, the offers will pop up on their

computer screen. When they call or stop by, a flashing message will notify agents of any special promotions. "I don't know of any other agencies that do something like this, and we believe it is something that can give us a distinct advantage," Ziturs says. "If you purchase a golf vacation from us, we're going to offer you others every chance we get."

New Kids on the Block

In many cases IT is helping agencies, but it poses a constant threat as well. A number of well-funded Web-based agencies have broken into the travel space over the past few years, picking fights with the agencies of old, making the field increasingly competitive. They use strategies that some brick-and-mortar agencies can only dream about.

Based on sheer volume, perhaps the hands-down leader is Menlo Park, Calif.-based GetThere.com, which started as an online booking engine in 1996 and changed to an online booking service last year. The difference, though subtle, is important. At first, GetThere linked travelers with independent TPF operators who charge suppliers (and therefore, indirectly, consumers) per transaction. Today, the company uses proprietary Unix-based software to link customers directly to suppliers, eliminating the middlemen and giving travelers access to fares they've never seen before. The result? Savings, savings and more savings. Despite

Time Travel

Travel technology has come a long way since the days of the reservation book

1950s

Travel technology begins with the advent of IBM's transaction processing facility (TPF), an Assembler-based application capable of transmitting as many as 7,700 messages per second from intake terminals to databases and back.



1960s

American Airlines improves upon original TPF design, building a Global Distribution System (GDS) called SABRE, capable of transmitting 8,700 messages per second. The system was used for reservations, and transmitted messages regarding seats available on future flights.



1970s

Early 1970s—Other major airlines develop proprietary GDSs. United builds Apollo, TWA and Northwest collaborate on Worldspan, and Continental hatches Amadeus.

Late 1970s—Hotels, rental car companies and other travel operations build GDSs.



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charging suppliers a small transaction fee of its own, GetThere lets them save by keeping more of what they sell. Consumers save money, too, because without transaction fees on their end, tickets are usually 20 percent to 30 percent cheaper than they are from the supplier directly.

"We save you a hell of a lot more than we charge you," explains Dan Whaley, the

suppliers as well, so they can change flights on the way to the airport, reserve rental cars from the air, even book hotel rooms from the beach. Vice President of Application Development Rick Lifszitz says that with this technology and the company's network of suppliers, he eventually expects to shave as much as \$65 off the price of ordinary business-class plane tickets.

"This is no time for agencies to get defensive and say, 'We'll be OK.'"

—Marc David Seidel, Founder of Airlines of the Web

company's cofounder and CTO. "That's not our official motto, but it works. If you go to the United Airlines website, you'll find our service, and you can use it to get cheaper fares than the ones you'd find on, say, Travelocity or somewhere else."

UT Austin's Seidel says the GetThere model could eliminate travel agencies altogether. Other companies already have adopted similar business plans. Oracle subsidiary e-Travel, for example, has incorporated Extensible Markup Language (see "Language Lessons," Page 224) to develop a bargain-basement interface called e-Traveler that works on just about any platform—PC, cellular phone or PDA. The product links customers directly to travel

These are exactly the kinds of savings that Donna Muhlhausen says she's seen as supervisor of travel operations for New York City-based Philip Morris Management, one of the world's largest manufacturers of consumer packaged goods. Muhlhausen signed up for e-Travel last year and says the technology has transformed the company's booking process. In the past, she says, when employees wanted to travel, they had to call the company's travel headquarters in Omaha, Neb. Today, however, Philip Morris employees can book trips without leaving their offices. By relying on e-Travel instead of travel suppliers or contract agencies, Muhlhausen has been able to negotiate lower transaction fees across the board. By

year's end, she expects to cut at least \$1 million out of her \$17 million travel budget.

Englewood Cliffs, N.J.-based Etravelnet.com has tried to center its approach on unified messaging technology, the art of combining fax, voice and data into one medium. Through a system called Haggglewithus.com, a telephony program translates digital price inquiries from client websites into voice prompts, then calls travel suppliers and asks them to approve bids in real-time. Sound like Priceline.com? CEO Michael Brent insists it's different, because his service lets customers bid not just once but as many as three times per call.

While unified messaging is a novel approach, Henry Harteveltdt, a senior analyst with Forrester Research in Cambridge, Mass., says technology for technology's sake won't last long in the competitive world of online travel. Insisting that all IT efforts must have well-defined goals, Harteveltdt hails GetThere and e-Travel as companies to watch because of the way they contract directly with suppliers. He predicts they will become two of the biggest players, giving headaches to behemoths such as Travelocity, Expedia and T2, the soon-to-be-launched site sponsored by 27 airlines.

"These companies are the ones that are really changing the industry," Harteveltdt says. "But by linking to suppliers, e-Travel and GetThere could eventually eliminate the need for organizations like Travelocity and

1980s

Early 1980s—Agencies start using GDSs, achieving access to every supplier in the market.

Mid-1980s—Travel suppliers use yield management systems to charge different prices at different times in an effort to minimize risk and maximize profit.



1990s

Early 1990s—To cut costs, suppliers raise commissions and divest GDSs.

Mid-1990s—The Internet explodes on the scene, and sites such as Travelocity and Expedia revolutionize the industry with online booking engines.



2000

Brick-and-mortar agencies must decide whether to face the online competition or concentrate on serving niche markets.

—M. Villano



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Language Lessons

Travel technologists ponder standards in XML

It's easier to learn than a foreign language. It's cheap to maintain. Best of all, it's something almost anyone can understand.

No, it's not love. It's Extensible Markup Language (XML), and travel industry technologists hope that it will eventually be the language their systems speak most frequently. The language represents a common framework for creating Internet-compatible messages, providing a standard approach for describing, capturing, processing and publishing information. It is, in short, the one language every computer system can understand.

With that in mind, travel technologists banded together last summer and formed the Open Travel Alliance (OTA) to promote XML across the industry. After months of research, the group released specifications for customer profiles in February, recommending a common vocabulary so that customers only have to enter their basic data and travel preferences once, no matter how many travel suppliers and intermediaries are involved in a trip.

"We want to be able to speak the same language," says Alan Kotok, the organization's standards manager. "If you go to a hotel, you're called a guest. If you rent a car, you're called a renter. If you fly on a plane, you're called a passenger. We want to simplify our terms and terminology, and XML presents the best opportunity to do it."

The travel industry isn't the first to extol the merits of XML. Health-care technologists have been contemplating XML standards for years, and other industries have considered the switch as well. What makes this language so special? According to Kotok, XML takes

communication down to the individual data element level and allows two parties to exchange individual data elements in any order or quantity they wish. This means that with XML, airlines could share passenger data with hotels, frequent-flyer information with car rental companies and seating charts with one another.

As it exists today, XML is quite a leap from ResTeletype and UN/Edifact, the two languages prevalent in the industry. While ResTeletype operates on sentences containing a minimal set of data in a particular order, UN/Edifact requires participating parties to agree on the messages they plan to exchange before they exchange them. Kotok says both languages are slow and that because they're sentence-based, both require unanimity at the highest level in order to create a new message or change a message standard. In other words, the systems are only as strong as their weakest links.

"[These systems] have already defined messages, so if they're trying to communicate with a system that doesn't understand, they're simply out of luck," says Kotok. "I'm not trying to put them down, but by the nature of the technologies, those systems can only go so far. XML is a totally different story. It's flexible. It's classy. It's exciting."

The OTA plans to release its next set of specifications by the end of June, according to Kotok. The group hopes to have its entire set of guidelines finished by the summer of 2001, at which point it will submit them to the American National Standards Institute for approval. For more information about the organization and XML, visit www.opentravel.org.

—M. Villano

Expedia. Those sites are front men for private TPFs. Take away those TPFs, and they're not much better off than most brick-and-mortar [agencies]."

On the Horizon

As these internecine conflicts play out, technology may be the only hope for brick-and-mortar agencies, at least in terms of corporate travel and particularly among larger agencies. But in the area of leisure travel, among small and midsize agencies, there may be another choice, one that doesn't involve much sophisticated IT at all: specialization.

Seidel says startup companies and those such as GetThere may one day control travel technology, while airlines and hotels monopolize distribution on the Web. If that happens, he says, brick-and-mortar travel agencies will most likely get by with minimal technology so long as they use it to promote expertise rather than airfares. The name of this game is selling experience, not travel. In Seidel's world, the industry would work something like this: A traveler goes online to purchase tickets, and if the traveler wants to talk to a travel consultant about, say, Ireland, he or she would visit that agent's website and initiate a real-time chat. For a personal touch, the agent could fire up a Web camera so the traveler could see who's on the other end or encourage the traveler to call directly or even stop by.

"Things have got to change," Seidel says. "I'm not saying travel agents have to run out and set up booking engines, but instead, I'm saying this is no time for agencies to get defensive and say, 'We'll be OK.'"

McCord's Craft agrees: "I don't think you can say categorically, 'This is how to survive.' There are a lot of good agencies out there. With technology or without, I'm sure the best ones will figure out how to adapt their businesses." **CIO**

New York City-based writer Matt Villano always asks for a seat in the exit row. He can be reached at mjv@whalehead.com.



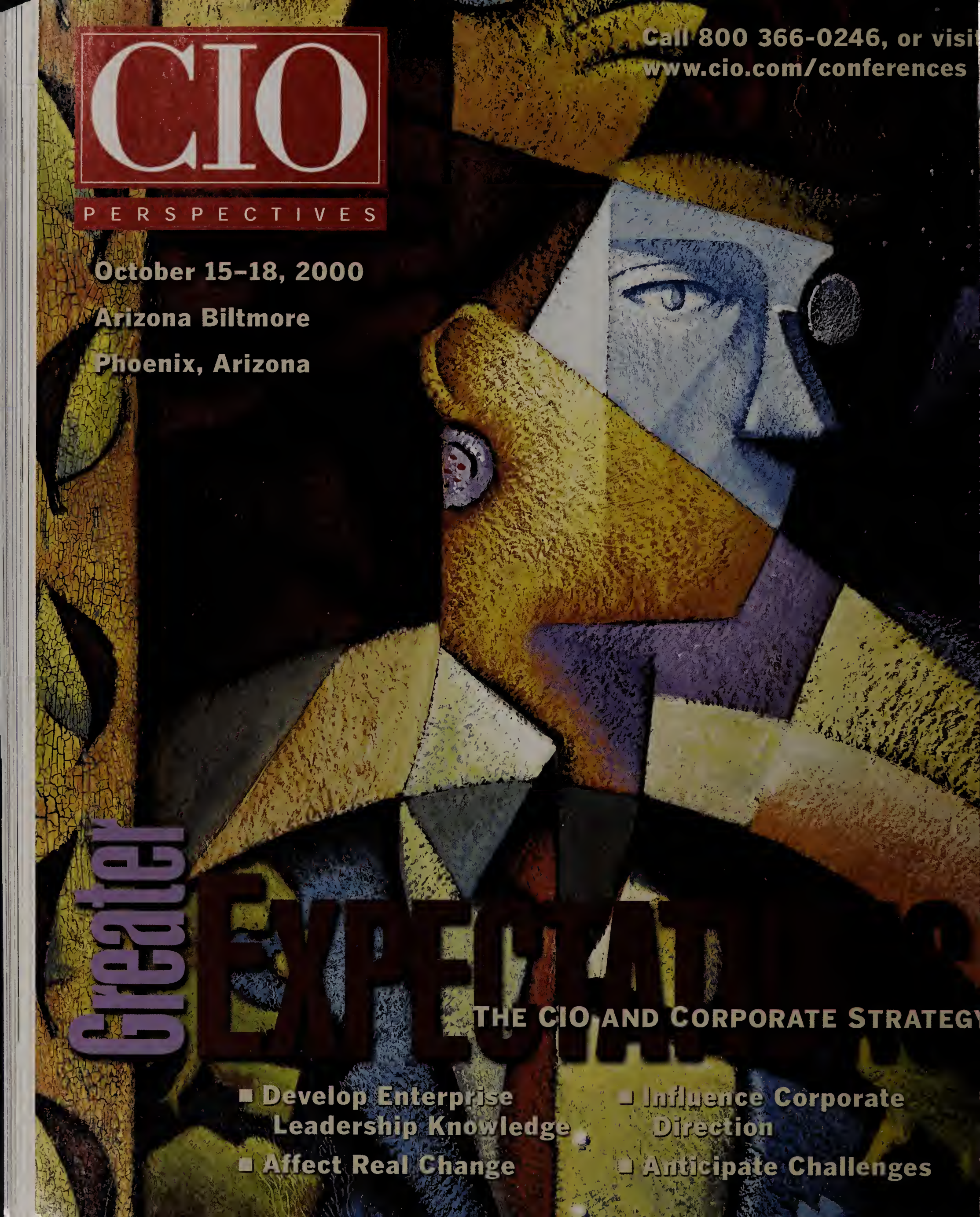
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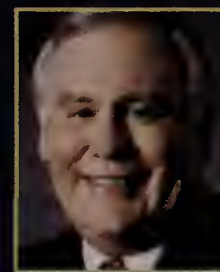


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HOME *on the* RANGE

BY ABBIE LUNDBERG

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"And you may find yourself
living in a shotgun shack

And you may find yourself
in another part of the world

And you may find yourself
behind the wheel of a large automobile

And you may find yourself
in a beautiful house, with a beautiful wife

And you may ask yourself,
'Well, how did I get here?'"

-Once in a Lifetime, Talking Heads



A CAREER AS A CIO

is pretty all-consuming. Still, there's more to life than system uptime, interoperability and managing service providers. So we've decided to seek out and profile CIOs who in one way or another have changed their lives. First up in this occasional series: former CIO of Dell and Pepsi, Jerry Gregoire.

Name Jerry Gregoire

Age 48

Last Job SVP & CIO, Dell Computer Corp.

Years in IT 26

Why He Got Into IT The love of technology

Why He Got Out Didn't love management or corporate politics. (Besides, with millions of dollars and people falling over themselves to offer interesting opportunities, who needs a job?)

Step Taken Retired to his 1,200-acre ranch outside Austin, Texas, in November 1999. Mends fences, plows fields and consults on technology and new business ventures.

Curriculum Vitae

Kraft CDC, 1974 Was "the entire computer department" at this Kraft Foods distributor. Wrote applications for a Basic 4 minicomputer so that the company could unplug itself from its service bureau.

Dean Research Corp., 1981 VP of systems development. Developed Zilog computer-based control systems for custom materials handling systems, primarily for aerospace.

Pizza Hut/PepsiCo, 1986 Started as an application development manager at Pizza Hut, managing a team of about 30 people. Promoted to director and then VP; became CIO of PepsiCo's beverage group in '92.

Dell Computer, 1996 SVP and CIO, with 2,200 people, global responsibility and a \$306 million budget.



Letting the Days Go By

Gregoire left Dell in November 1999 a wealthy man. His four years at the computer manufacturer were some of the most prosperous—and intense—in the company's history. (Like many successful businesses, Dell wrestles with how to hold on to the

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hard-working executives it makes rich—and therefore independent.)

Over the years, his rise to CIO took Gregoire away from the work he loved most: the hands-on, roll-up-your-sleeves creative business of writing code and building systems. “It was always about the technology for me,” he says. He became adept at problem solving at Dean Research, where each contract presented a new puzzle that had to be cracked from scratch. Back then, he put in such long days that “my wife would have to call me at night and tell me it was time to come home.” Work was pure fun.

The move to Pizza Hut seemed like a great opportunity to keep doing what he loved at a bigger, higher profile company.

“When I went to Pizza Hut, I never thought I’d be anything but a project manager,” he says. “But I kept getting promoted and getting bigger groups.”

Gregoire’s success has had as much to do with his people skills and leadership abilities as with his natural aptitude for technology. He’s had staff follow him from one company to another; 36 people went with him from PepsiCo to Dell. But while he was great at building teams and inspiring the people who worked for him, managing wasn’t really what he loved best. “I found myself spending less and less time with what I was passionate about, and more time in staff meetings, interviews and performance reviews—things I was a lot less interested in.”



The Next Step

Would he have done it differently if he had it to do again? Not at all. For one thing, “the money was great,” he says candidly. “Not only at Dell, but also at Pepsi in the '80s, which was then the hottest stock on Wall Street. We were golden. I would have been an idiot to turn it down.”

The Best Part

The early stuff at Dean, writing software to control complex machines. “I worked on more spectacular projects later on, but in those days I could spend as much time as I wanted on what I was passionate about. Now that I’m retired, that’s happening again.”

The Worst Part

Having to fire people for things unrelated to their job performance. “There’s nothing more discouraging than having HR tell me to fire someone who’s really bright for doing something really stupid—like telling an off-color joke in a meeting.”

Would Like to Be Remembered For

The people he’s been able to attract and hold on to. “As the problems got harder, [my success] had less and less to do



with me and more to do with the collections of people I brought together.”

The Next Step

Jerry spends most of his days working on his ranch with his wife, Stephanie. Stephanie, a former grade-school teacher, is taking her own next step: After years supporting their daughter Megan’s interest in horseback riding, she took up riding herself five years ago and is now raising high-performance American Paint horses and competing in reining competitions. (Megan, a freshman at Texas A&M, is pursuing a career as a large-animal veterinarian.)

The Gregoires are restoring the 1,000 wild acres they added to their spread a few years ago to what it was like before it became overgrown with brush and cedars, and they’re building a new ranch house and stables farther into the heart of their land. They’re building a second home on Kiawah Island, S.C.—the only place where Jerry really relaxes, according to Stephanie.

As a retired CIO, Gregoire’s interests are eclectic. He still enjoys rolling up his sleeves and working with his hands. The difference these days is that instead of writing code, he’s welding broken farm equipment, building furniture, plowing pastureland and painting fences. He’s an avid reader (literature and technology), and he’s writing a book about how to really evaluate the performance of an IS organization.

Gregoire sits on the boards of Bike.com and On Semiconductor, and he works with Texas Pacific Group, a venture



Gentling a new colt is a family affair. Top photo: Jerry and daughter Megan stand by while Stephanie gets this two-week-old used to a human’s touch. Bottom: Jerry’s turn.



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The Next Step

firm, advising them on whether the companies they're interested in have the technology they need to succeed. He's on retainer to Cambridge Technology Group, and he speaks to boards of directors and senior management teams as a kickoff to large strategic development projects. "I'm the shock troop. I tell them what things they need to worry about."

Ironically, he says, "I'm more up to speed on the technology now that I'm retired because I have more time to spend keeping up with it."

Once in a Lifetime

Gregoire has what most of us only dream about: the freedom and the money to do whatever he wants. "When I wake up in the morning, I get to decide exactly what I'm going to do that day, and I get to spend as long on it as I want. Anybody who isn't jealous of my life now ought to ask the person next to them to take their pulse."

But he isn't gloating. Ask, why him? and he'll tell you he's not all that special. "A lot of my success was just timing," he says. "I made a lot of mistakes, tried to do a lot of projects

that I shouldn't have taken on. I made some mistakes with people that I still think about and regret to this day."



The Gregoires unearthed this bullet-riddled truck in the process of clearing a section of land.



What He's Learned

Success as a CIO, particularly in a large organization, depends on so much more than technology. "If you don't care about people, you're not going to make it. A CIO personally has a lot less to do with the success of the work on a daily basis. You have to be able to motivate someone to give up their weekend and work 18 hours straight for a company that has no intention of paying them more. It's about creating a vision for the project and what we might do that day; keeping focus on the project rather than on the company.

"If [Disney CEO] Michael Eisner and the guy who wears the Mickey Mouse suit both decide not to come in to work tomorrow, who's going to be missed the most? That's the way you have to think about everyone who works for you. You've got to maintain some perspective."

Parting Shot

The current economic boom has made early retirement an option for a lot more people. But it's a mistake to put life on hold until that day arrives. "A lot of people in this business run their careers at 300 miles an hour, then when they retire they hit a wall. They've got nothing else in their lives besides their work and their family. For me, work has always been just a means to an end." **CIO**

Have you or someone you know taken an interesting next step? Tell Editor in Chief Abbie Lundberg about it at lundberg@cio.com.

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Can We Share?

BY HEATHER BAUKNEY



So many vendor-customer gainsharing relationships bring more pain than gain. Find out how one company is bucking that trend...so far.



After abandoning a life of fasting and medita-

tion for the material world, the title character in Hermann

Hesse's



Siddhartha takes a job assisting a suc-

cessful

merchant, Kamaswami.



Although Siddhartha has a knack for

business and customer service, Kamaswami still questions

his true dedication to increasing the merchant's profits. A

friend advises the merchant, "Give him a third of the

profits



of the business which he conducts for you,

but let him share the same proportion of losses if any arise.

He will thus become more enthusiastic."



This sort of atypical pay formula, described by Hesse nearly 50 years ago, characterizes a contract signed in December 1998 by Chicago-based outsourcing vendor Debis IT Services North America and Freightliner Corp., a heavy-truck manufacturer headquartered in Portland, Ore. The five-year, \$70 million contract is based on what Freightliner estimates it would have spent over that period on the IT operations it is now outsourcing to Debis. Nothing surprising there. But Freightliner pays Debis only a baseline amount to cover the vendor's costs. Any profit depends solely on Debis generating savings. When Debis saves Freightliner money by performing the IT functions for less than Freightliner would have, the two companies split the savings based on an agreed-on percentage.

While neither Siddhartha, Kamaswami nor his friend had a

name for this split from the traditional fee-for-services pay structure, it's what we now call gainsharing. Like the merchant Kamaswami, more and more companies are wanting their Siddharthas' livelihoods to depend on their success.

"There's much more dialogue about it now than there was before," says Linda Cohen, managing vice president for sourcing strategies management at Stamford, Conn.-based Gartner Group. "Our clients like to talk about it," she says, "because the buyers want the vendors to have some skin in the game."

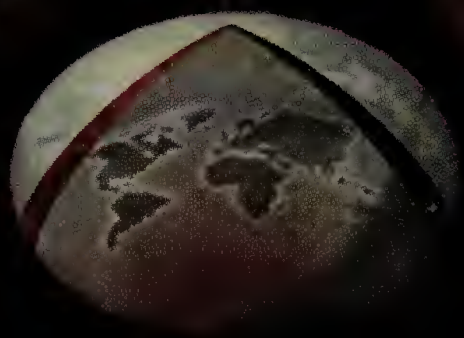
In a white paper on outsourcing, Peter Bendor-Samuel and Kathleen Goolsby predict a rise in the adoption of a number of corporate structures—like contingency pricing, cosourcing and joint ventures—that all include elements of gainsharing. "Companies no longer view outsourcing solely as a business tool with cost to one partner being the revenue of the other," she says. "They realize that cooperation and collaboration in

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outsourcing relationships can lead to gain for both partners." In short, they see a movement from straight outsourcing—when a vendor does something *for* a buyer—to some type of gainsharing—when the vendor does something *with* a client, says Bendor-Samuel, editor of the *Outsourcing Journal* and president of Everest Group in Dallas.

Why this growing corporate interdependence? Stan Lepeak, a vice president and senior analyst at Stamford, Conn.-based Meta Group, believes the increased interest in gainsharing is twofold. "First, people are becoming more comfortable with outsourcing in general," he says. "They're outsourcing more critical processes and getting creative about pricing." Second, buyers are increasingly scrutinizing the services for which they're paying vendors. "A lot of people have gotten in trouble for handing over the checkbook to consultants," Lepeak says. "They feel they've been overcharged—burned in the past—and are looking for a way to attach pricing to value gained. They see gainsharing as one way of holding people more accountable."

Big Truckin' Deal

Debis first approached Freightliner about entering into a partnership in early 1998. "Their timing was very good," says Freightliner CIO Rob Hassell. "When Debis CEO Rick Wargo called on us, we were looking to lower costs and upgrade capabilities." Freightliner had a number of proprietary systems that needed to evolve—software that allowed more than 500 North American Freightliner dealerships to support their customers

in the 24/7 transportation environment. Also, Freightliner was growing dramatically and wanted to improve IT infrastructure deployment and management for the dealerships. But the company also wanted to reduce the costs of those operations for itself and its dealers. Hassell says what won him over was Debis' uncommon gainsharing proposition—asking no flat fee for its services, only its baseline costs plus a portion of the savings that resulted. This, plus the painless way Debis acquired its understanding of Freightliner's business needs, convinced him to work with Debis. "They offered to do a free market study to help us get our arms around what the opportunities were," Hassell says. "The whole package was innovative marketing on their part."

What made the proposal go down so easy was Freightliner and Debis' shared parentage. At the time the contract was signed, Debis, a subsidiary of Debis Systemhaus in Stuttgart, Germany, was a wholly owned subsidiary of DaimlerChrysler, as is Freightliner. Hassell says that because the two companies were related, Freightliner shared information with Debis during the exploratory phase that it might not have disclosed to an outside vendor—such as details about the support applications that differentiate Freightliner from its competitors. But Hassell adds that having the same parent doesn't lessen the risk associated with gainsharing, "because the only way that Debis gets paid is if we make money."

The contract transferred to Debis the ownership and operation of the dealership system servers, network and the client devices. Application development and related help desk chores remain with Freightliner, though the truck maker forwards to Debis all infrastructure help desk items.

In its analysis of Freightliner's infrastructure, Debis calculated Freightliner's baseline costs for providing IT services to dealers and their customers. "We identified what it actually cost them to deliver these services," says Debis' Wargo, "and then asked ourselves, 'How much less can we get it done for?'" He says Debis arrived at a cost per seat that it used to compare the vendor's costs with Freightliner's. To make any profit, the outsourcer must deliver a cost per seat that is less than Freightliner's baseline by certain percentage benchmarks each calendar quarter. While neither side will disclose the quarterly percentage savings they have already achieved, both say Freightliner's savings has increased every quarter. The pair is coming to the end of its fifth quarter and both parties expect more savings. Should Debis fail to effect a savings in any quarter, Freightliner would still pay Debis' actual costs to deliver the service, but Debis wouldn't earn any profit. In spite of that possibility, Wargo is confident because of the economies of scale he says Debis provides and its experience in procuring vendor services (like telecom hookups and hardware) for less.



Under the Hood

Who's partnering: Truck maker Freightliner and outsourcing vendor Debis

The terms: Five-year contract valued at \$70 million

What's outsourced: Dealership client/server-based systems network and hardware (migrating to Internet-based architecture)

The split: If Debis meets or exceeds the quarterly benchmark for savings on cost per seat, it keeps a percentage of the savings; Debis gets no other fees above its baseline costs.

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As time goes on, the buyer asks, “Why am I giving this revenue away? What have you done for me lately?”

But cost isn't everything. Debis must also surpass the service level Freightliner achieved when it ran its own show. “We’re not going to get paid,” says Wargo, “if we answer help desk calls every other week.” Debis’ role—managing and maintaining the interface between large fleets of trucks and drivers, dealers and Freightliner—is crucial to Freightliner’s profitability. “The thing to remember,” says Wargo, “is that these trucks are capital equipment; they’re not like our cars. If our car breaks down, we can take the bus or get a ride to work, and we still get paid our salaries. But the dealer’s customers are owner-operators who don’t have that flexibility. If their trucks are not running, they’re not making money. So getting the fleets what they need, through the dealers, is paramount.”

More gainsharing is expected when the partners combine efforts to migrate dealer apps from their traditional client/server platform to a thin-client, Internet browser-based architecture later this year. “Gaining the benefits of a thin-client, browser-based solution cannot be accomplished by either Freightliner or Debis alone,” says Wargo, “since Freightliner is responsible for converting the apps into thin client, and [Debis is] responsible for getting the infrastructure ready to support that environment. This is one reason why the gainsharing approach

works. We are both incentivized to get our respective parts done because we both benefit from the cost savings.”

Road Bumps

While Hassell is hesitant to discuss any specific stumbling blocks in gainsharing, he admits that it’s not always easy. “We knew there were things that would be difficult,” he says, “but we haven’t had any showstoppers.” He says that since Freightliner has a history of working with outside software developers, going outside for infrastructure wasn’t a foreign concept. “We’re also aware of outsourcing failures,” Hassell says. “We are not a company that takes that lightly.” He says it’s when companies expect the partnership to steer itself that they run off the embankment. “The trouble that people get into is when they put up a plan and then walk away. If you want it to work, you can’t turn your back on it.”

Wargo acknowledges that the gainsharing approach is more complex than a fee-for-services arrangement. “For 4,500 workstations, itemizing [cost per seat] is a pain in the ass. But even though it’s a bit more complicated, the gain is worth it,” Wargo says. Also, there was friction when it came to redesign-

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ing the IT infrastructure. Drawing stark lines between their respective roles in this effort resulted in one or the other party having a dominant role, which made both bristle. "Sometimes," says Wargo, "where we drew the lines in the contract between what we do and what they do turned out not to be the best in operation, so there's been a give-and-take there. We sit down and work it out because paying lawyers doesn't benefit either of us."

Besides these minor detours, analysts predict other problems for the partners down the road. "I rest my case," says Gartner's Cohen, when she learned that the two are still in the honeymoon phase of their contract. "Check back with them

in a year. Trust me, the bloom wears off the rose." Cohen says that in this type of gainsharing, the customer is literally giving away some amount of revenue to the vendor over time. "At first blush, when the first gains are realized, it seems wonderful," she says. "But, as time goes on, the buyer asks himself, 'Now why am I giving this revenue away? What have you done for me lately?'" The vendor might still be saving the buyer money, but that value goes unrecognized.

Alice Young, chief analyst for Dataquest's IT services group in Stamford, Conn., concurs. "The users forget what disarray, what lack of accomplishment in cost savings existed before the vendor came on the scene. Once they reach a new level, the users



Relationship Insurance

Converting a traditional contract to gainsharing proves a profitable investment

"We're both on the same side of the fence now," says Mark Singleton, senior vice president of finance and operations for Fidelity and Guaranty Life Insurance, about his gainsharing deal with Computer Sciences Corp. of El Segundo, Calif.

The transition over the past four years from a traditional business process outsourcing contract to a value-based one has been a big improvement for Baltimore, Md.-based F&G Life. "If you go back a year or two, when things were not managed as well as they are now, it was not as certain who was taking care of the details," says Singleton. "But things have stabilized in the last 18 months or so because of the improvement in the process [the shift to value-based pricing]. The walls came down immediately. We went from a defensive client-vendor situation to a real partnership."

Singleton credits the partnership as the driving force in his company's heady growth last year. F&G Life

reported 1999 year-end new sales of more than \$1 billion—a 100 percent increase over 1998.

The value-based pricing contract stipulates that CSC earns a fixed percentage of profit on top of its costs, guaranteeing that CSC will always earn a profit on the work it does for F&G Life, even if the work costs more than was originally expected. That's the upside for CSC, but it's also the downside. Because the percentage in the contract is fixed, it is, in effect, a cap on the profit CSC can earn. If the profit margin on the vendor's services exceeds that fixed percentage, then CSC must refund the difference to F&G Life.

What then is CSC's motivation for efficiency? Singleton says the more efficient CSC is—for example, in processing new insurance applications—the more policies it will process overall and the more total profit it will make because profit is based on the number of units processed.

Singleton attributes much of the

partnership's success to joint management staffing decisions. The partners launched a management integration plan in January that includes an F&G Life/CSC executive steering committee and joint strategic planning and operations and technology management teams. Functional CSC administrative managers report to F&G Life Vice President of Operations Steve Kennedy. The committees are charged to keep a close eye (with monthly, quarterly and some daily reviews) on the three areas in which CSC provides service—administrative services, product development and technology. Staffing and technology resource allocation and new investments are jointly discussed and decided on. Singleton says both sides are now more comfortable with the gainshare strategy in place, and most reviews of work are monthly and quarterly. F&G Life reviews IT system performance and CSC's costs each month and reserves the right to audit CSC's books at any time.

—H. Baukney

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Both sides must clearly define what they consider gain, or acrimony will result.

forget what it was like before they had access to the vendor's expertise."

Since there's little that can prevent this period of disillusionment from coming, Young advises vendors to be flexible to help the relationship survive. "The buyer is going to expect more," she says, "so we need to see vendors proactively resetting the bar. The contract has to be such that the vendor can scout around for new value to deliver to its customer."

One of the biggest outsourcing vendors, IBM, agrees that flexibility is crucial. Robert G. Farrell, vice president of global business development in IBM's Global Services division in Somers, N.Y., says the most successful gainsharing for IBM is

the result, in part, of pliancy. "Since IT changes over time, being flexible and adapting to changes in needs and requirements—basically being ready to hit the reset button—is a necessity," he says.

The five-year length of Freightliner's contract could be another source of friction, Bendor-Samuel predicts. "If part of what Debis is doing is a onetime restructuring, Freightliner stands to risk overpaying as the years pass," he warns. Bendor-Samuel cautions his clients about signing the lengthy contracts—often five, seven or 10 years—that generally accompany these unions. Over time, the buyer comes to feel that it's paying too much or paying twice for the service. Another problem is that over longer stretches of time, the vendor's original advantage will be matched or surpassed by its competitors. By contrast, "short-term sharing" allows both sides to be clear about the role of the two parties, the economic conditions under which the contract was drafted, the type and amount of value generated, the time and money to be invested and the state of the competition.

But Hassell says he's anticipated that possibility already and has an evacuation route. "If three years into the contract we decide we've done all we're going to in savings—say we've achieved 75 percent of our overall goal and the rest is just not there—we can change the contract to a standard service agreement or terminate it."

If Hassell and Wargo's partnership does degrade over time, it will have plenty of company. Lepeak has seen gainsharing deals crash and burn many times. "In talking to clients," he says, "I've learned that 50 percent of the time, they are not happy even a year or so into the contract because they did not negotiate in their own best interest. They feel like they've been exploited by the vendor" or taken advantage of when a vendor gains an unexpected windfall at their expense. One of the most visible examples of this was the gainsharing relationship between EDS in Plano, Texas, and the city of Chicago several years ago in which EDS was contracted to improve the technology for collecting parking tickets. "EDS made something like 10 times what the city had expected," says Lepeak. "They were forced to renegotiate the contract because the city so clearly gave away the store."

Caution Signs

Despite the odds, there are some ways companies like Freightliner can help keep their gainsharing partnerships rolling along. Lepeak says fundamentally, both sides need to clearly measure and define the goals they want to achieve. If each party lacks a clear notion of what the other considers value or gain, it slows up negotiations and can cause acrimony later.

Success also depends on how the relationship is managed.



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Michael Corbett, founder and president of Michael F. Corbett & Associates, a Hyde Park, N.Y.-based outsourcing adviser, suggests creating a new governance system—a pool of executives drawn from both sides that will look after the gainsharing contract (see “Relationship Insurance,” Page 246).

When considering a gainsharing arrangement, it pays to

Shop around. “Get down to two or three companies and engage them in an intimate way,” says Corbett. “Make sure you share the same values. And look for a track record of proven success.” He says Freightliner didn’t do enough shopping around. “If it were a standard fee-for-services contract, we would have bid it out,” Hassell says. But since gainsharing is a more intimate relationship, Freightliner chose to stick close to home.

Don’t rush in. The most successful gainsharing ventures analysts can point to are ones in which some type of relationship

stant adjustment. This contract is a living, breathing organism.”

Hassell agrees: “In drafting the contract, we tried to be as practical as possible in terms of dollars and cents, but we also tried to build in some flexibility. There’s a lot of language in the contract to help accommodate for things we couldn’t initially anticipate.” For example, if a PC is reduced in price, independent of Debis’ actions, that savings would not be included in Debis’ gainshare profit.

Another example of flexibility is the provision in the contract allowing for “events,” such as Freightliner wanting to change network topology. “We said, ‘OK, to do this there’s going to be some cost,’” Hassell says. “We’ll pay for it on a one-time basis only; there’ll be no ongoing gainshare.”

Trust, but don’t be naïve. Another gainsharing paradox is that, while most parties insist that trust is crucial to success, they also recognize the importance of transparency and self-interest.



“Trust is not given; it’s earned. In the meantime, be open in your dealings.”

—Peter Bendor-Samuel, Editor, *Outsourcing Journal*

existed previously. Start out with traditional outsourcing to test the relationship. Then look at taking it to the next level, either outsourcing more critical processes or trying a creative pricing mechanism like gainsharing.

Be flexible but detailed. One of the paradoxes of gainsharing is that while a contract can’t be carved in stone because of quickly changing factors, the contract must be specific enough to dispel confusion. Tim Barry, vice president of applications outsourcing at Boston-based vendor Keane, says specifics are a must. “Gainsharing is a great arrangement if you can get quantifiable,” he says. “There have to be good, solid metrics in place.”

Adds Bendor-Samuel, “I’ve seen a lot of these deals go bad because the contract was too vague. It’s like when you agree to have dinner with your brother a year from now. What do you have in mind? A show and a nice dinner. What does he have in mind? Burger King. He’s just thinking he has to feed you, not wine and dine you.”

The Debis-Freightliner contract has the right mix of detail and flexibility, its authors contend. “In today’s [climate of] economic growth, companies adjust day by day,” says Wargo. “To me, that’s the advantage of gainsharing—it means a con-

“Trust is not given; it’s earned,” says Bendor-Samuel. “In the meantime, be completely open in your dealings.” In the Debis-Freightliner deal, both parties had an open view of the books, reducing the possibility of one or the other thinking they were being stung. “We have a very open relationship with Freightliner,” says Wargo. “They have a right to audit us at any time; trust is a by-product of that.”

While we may not know the ultimate outcome of the Debis-Freightliner partnership for several years, its success thus far seems greater than the merchant Kamaswami achieved in his gainsharing with Siddhartha. To the merchant’s dismay, Siddhartha was so preoccupied by achieving spiritual enlightenment, it mattered little to him if he helped the merchant turn a profit or a loss. Corbett says the merchant learned an important lesson that can benefit everyone considering gainsharing—make sure that vendor and buyer interests are aligned before diving into such a partnership. “You don’t want to find out too late that a vendor is more concerned with attaining nirvana than profit,” he says. **CIO**

Have you attained gainsharing nirvana or lost your way? Tell outsourcing expert and Senior Editor Tom Field your tale at tfield@cio.com. Heather Baukney is a freelance writer based in Cambridge, Mass.



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BY HEATHER HARRELD

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ILLUSTRATION BY TOM GARRETT

is brewing in the cities and towns that have been left in the dark. Hospitals are flooded with those desperate for medicine. The few medical supplies that do exist cannot be transported because of a fuel shortage. In the meantime, citizens are fighting for the last remaining groceries on bare shelves and have begun bartering their most precious possessions to meet their basic needs. But government officials have little recourse because

emergency vehicles are running low on fuel and the National Guard's communications systems are down. Since most of the U.S. Defense Department's communications ride on the national telecommunications backbone, they too have been crippled, leaving the country's borders open to the terrorist's attack.

This is not the story line for a new high-tech science fiction novel but a potential scenario that has spurred the Defense Depart-

ment to protect the nation's critical infrastructures—the underpinning of the nation's economy owned and operated by the private sector that could be potential targets for cyberwar. As part of the National Plan for Information Systems Protection announced in January, the government and the private sector will work together to identify the key national security assets and infrastructure systems. The partners will share

Privacy

information about vulnerabilities with each other and with others in the industry.

While that scenario makes a strong case for the operators of critical infrastructures, such as utilities, banks and the national telecommunications grid to participate in the government's plan, the increasingly interconnected digital world means that no company is immune to cyberattacks—even those not directly involved with the infrastructure. For example, say a hacker launches a denial-of-service attack designed to slow the nation's railways using the unprotected server of a small manufacturing company as the launching pad. In addition to any revenue losses caused by a disruption to mission-critical systems, that manufacturing company could face massive legal liabilities from those who may have been hurt in a resulting train crash.

The infrastructure protection plan would provide the private sector with early warnings about potential attacks and a crucial communications mechanism that a company under attack could turn to for help. This type of effort might have guarded against Internet intruders earlier this year, when some of the most popular e-commerce websites, such as Amazon.com, eBay and Yahoo, were knocked offline by a rash of denial-of-service attacks. While these attacks have served as a wake-up call to many companies in the private sector, they are mere skirmishes in the overall war against hackers and terrorists, government officials say. "When we have the cyber-Chernobyl, it's really going to scare the hell out of everybody," says Jody Westby, president of the Denver-based Work-IT Group, who also works for the Critical Infrastructure Assurance Office (CIAO) to market the government's infrastructure protection efforts.

A FEW OUNCES OF PREVENTION

To prevent the potential devastating fallout from a cyberattack, Westby urges CEOs and senior management to instill infrastructure protection as a business policy rather than relegate it as a technology issue. But beyond internal actions, CIOs can urge their com-



"WHEN WE HAVE the cyber-Chernobyl, it's really going to scare the hell out of everybody." —Jody Westby, Critical Infrastructure Assurance Office

panies to participate in an information-sharing and analysis center (ISAC), part of the government's overall plan. Various industry sectors will form these ISACs, through which participants can share data about potential threats to their systems with each other and the government.

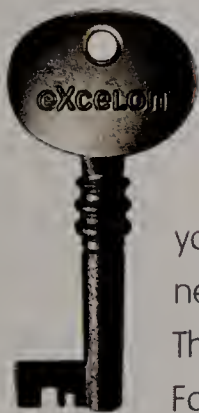
While information sharing is key to the White House plan, developing this exchange may prove tricky. The private sector, especially the banking and finance industry, has traditionally been loathe to share any type of information detailing system vulnerabilities for fear of public embarrassment and shareholder reaction. But the give-and-take might make such risks worthwhile. The private sector can benefit from government-gen-

erated data that details potential threats to corporate systems, says John Powers, former commissioner and executive director of the president's Commission on Critical Infrastructure Protection. (Powers has since become the director of research for DEFCON and the chairman of Corporate Communication Resources.)

"What the government folks want more than anything else is information related to the types of attacks that are occurring," adds Powers. "One of the things that the private sector should want is a better statement of what the emerging threat is. What they do want is early warning that a prospective attack is possible and even imminent." The needs of the private sector and the govern-



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ment can mesh, he says, by creating ISACs that report details of attacks without including any information that identifies the company whose systems were compromised.

PRIVATE SECTOR BUY-IN

It appears that the private sector is beginning to buy into this plan—after all, what company wants to risk a cyberattack if Uncle Sam can help stop it? Hundreds of industry participants, including those from BellSouth, Cisco, Continental Edison, Microsoft and others, flocked to a February White House

retreat on infrastructure protection. They also formed the Partnership for Critical Infrastructure Security to share information with the Commerce Department about potential vulnerabilities and advanced R&D work in information security and to develop best practices to span the critical infrastructure sectors.

Robert Wright, director of enterprise security at BellSouth, says his company is participating in the partnership because BellSouth realizes that the security of today's networked infrastructure expands beyond individual

company boundaries. "The partnership will help establish a more structured process around existing vulnerability assessment, information sharing, and reporting and response procedures," Wright says.

This alliance appeals to those in other industries as well. Rick Holmes, senior director of security and quality assurance at Omaha, Neb.-based Union Pacific Railroad, says his company is interested in forming a partnership with other railroads that would allow them to work together if there was ever an attack on one of their systems. For example, he says the biggest threat to his company's systems is a denial-of-service attack that could hamper operations. During such an assault, he says, he could confer with other railroads to determine if it was an isolated or widespread attack. In that scenario, companies could pool their efforts to ward off the intruder and avoid duplicated work. "If you can systematically cause a denial of service, you can cause a waterfall slowdown," says Holmes. "Having a place or communication method among the railroads would be very beneficial."

The government has already begun this type of work in 21 cities through a program called InfraGuard. InfraGuard is designed to gather data from the private sector, anonymously detailing intrusions to their systems while providing potential-threat data via alerts. However, the alerts are not sent in real-time because the FBI has to analyze and sanitize the data. Holmes adds that by the time he gets the data from the FBI, he's already seen it in other sources. "I don't see a whole lot of sharing going on from the government," Holmes says. "It's not news by the time I get it [from the InfraGuard program]."

Omer Soykan has another concern that others in the private sector share. The CIO of New York City-based Broadview International, a mergers and acquisitions company, says he is willing to share information related to the security of his company's systems with members of the banking and financial industry but is concerned about that information being stored by the government. "If we share our security structure with an authority, and it leaks to some orga-

"IF WE SHARE our security structure with an authority, and it leaks to some organizations that are not friendly to us, it could be very damaging."

—Omer Soykan, CIO, Broadview International



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Geoffrey Moore
Founder and President
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SUNDAY, AUGUST 13

Registration

Riverwalk Golf Tournament

CIO hosts a golf tournament at the Riverwalk — San Diego's newly redesigned championship golf course.

Café 100 Reception

Meet other participants, Award honorees and Symposium Partners in our informal living room.

MONDAY, AUGUST 14

Registration and Breakfast

Opening Remarks and KnowPulseSM Poll

Gary Beach
Group Publisher
CIO Communications, Inc.

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CIO 100 Introduction and Welcome SYMPOSIUM MODERATOR

Geoffrey Moore
Founder and President
The Chasm Group

One of the world's foremost high technology gurus, Moore returns as the CIO 100 Symposium moderator and kicks off the program.

Culture on the Fault Line: How Large Companies Can Be Nimble in Technology-Enabled Markets

Moore provides new models to help analyze and change current business practices to meet and surpass the challenges of the marketplace.

Luncheon

From No to Yo! Making the Transition from CIO to CEO

Katherine Hudson
President and CEO
Brady Corporation

Katherine Hudson is president and CEO of Brady Corporation, a \$471M international manufacturer of identification and material solution products. Prior to Brady Corporation, Hudson was CIO of Kodak. Hudson discusses the advantages and disadvantages of being a CIO and how this affected her next step to CEO.

Industry Briefing Sessions

The Symposium Partners lead informative and innovative industry briefing sessions giving you the latest pulse on the information market.

Case Studies Highlighting the Latest Results on the Business to Business (B2B) Marketplace

Find out what the challenges are in forming these exchanges. Identify the success factors for these different trading models; how are they attracting suppliers and what are the long term benefits?

B2B PANELISTS

David Giometti
Vice President of Vendor Relations
Sears, Roebuck & Co.

Roberta Kowalishin
Vice President of Technology Ventures
CheMatch.com

Café 100 Reception

TUESDAY, AUGUST 15

Breakfast

Day Two Kickoff and Executive Exchanges on Customer Relationship Management

Moderator Geoffrey Moore
Founder and President
The Chasm Group

Customer relationship management (CRM) has become the mantra for organizations that want to move past cost-cutting measures to achieve growth, increase market share and build customer loyalty. Moore leads a discussion on the current CRM marketplace and its effect on the Internet, and sets the stage for an Award honoree presentation.



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Learn How American Airlines Soars to Meet its Customers' Needs

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Vice President and CIO
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John Samuel
Vice President, Interactive Marketing
American Airlines

A CIO 100 Award honoree, American Airlines has been a pioneer in utilizing technology to effectively meet its customers' needs. Scott Nason, vice president & CIO, and John Samuel, vice president of interactive marketing, share how they continually personalize their services to satisfy customers and increase revenues.

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Vance engages us in a lively discussion on how to cultivate continuous innovation and creativity in our organizations.

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Luncheon

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Café 100 Reception

CIO 100 Awards Dinner and Ceremony

All participants are invited to attend a special black tie reception, dinner and awards ceremony on Tuesday evening recognizing this year's CIO 100 Award honorees. The "Oscars" of the IT industry, the event features champagne, a six-course gourmet dinner, and a presentation of the CIO 100 Award to all honorees.

WEDNESDAY, AUGUST 16

Breakfast

KnowPulse Poll Results

Lew McCreary
Editorial Director
CIO Magazine
Editor-in-Chief
Darwin Magazine

After the Business Plan: Internet Security

John Puckett
CTO & CIO
toysmart.com
Co-Chairman
Private Sector Council

John Puckett, co-chairman of the Private Sector Council in Washington D.C. and CTO and CIO of toysmart.com, addresses security threats. Are they real? What measures can be taken to achieve an acceptable level of security? Puckett also outlines how the best security plans and policies should be developed.

Leadership in the Age of Promise

Wesley K. Clark
Four-Star General
United States Army (Ret.)

Wes Clark, former Supreme Allied Commander of Europe, possesses one of the nation's most distinguished and significant records of military service. His leadership experiences have taken him from Vietnam to Latin America and ultimately to the position of NATO's Supreme Allied Commander. In this session, Clark presents a dynamic view of leadership based on honor, conviction and action.

Summary and Closing Remarks

Moderator Geoffrey Moore
Founder and President
The Chasm Group



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Privacy

nizations that are not friendly to us, it could be very damaging,” says Soykan, former managing director of technology planning for the American Stock Exchange. He adds that the government should model its notification efforts after those provided by many antivirus vendors today and provide regular notices to the private sector alerting them to potential threats.

It will be up to the private sector to hammer out these details during the development of an information-sharing strategy. The various sector leaders developing ISACs will form systems based on participants’ comfort level and the culture of the particular industry, says John Tritak, director of the CIAO. In addition, while many people think information sharing includes strictly cyberthreat data and security breach incidents, it can also encompass best practices and common methodologies for securing systems, he says. Foremost in the infrastructure protection effort is emphasizing that the government will not be dictating to the private sector.

“There is a recognition that [the government] can’t get it right,” Tritak says. “We need to better understand the perspective of industry. Partnering with the government is an opportunity to shape the nature of your government partner. The shaping of the partners goes both ways.”

ROLE MODELS

The telecommunications and banking industries have each formed an ISAC, and other industry sectors are now developing plans for their own centers. The Information Technology Association of America (ITAA) is heading up efforts to launch an ISAC for the communications sector, where interest was again bolstered by the recent website denial-of-service attacks—which ITAA President Harris Miller describes as a “two-by-four across the head” for the industry. For now, the group is focusing its efforts on information sharing among sector participants, says Miller. “Everyone has to be part of the solution,” he says. “If only rich people listen to public health warnings and poor people



“WHAT THE GOVERNMENT folks want is information related to the types of attacks that are occurring.”

—John Powers, former commissioner, Commission on Critical Infrastructure Protection

don’t, rich people are going to get sick too because poor people are going to cough all over them. No one should think he or she is immune.”

Electric utilities in the mid-Atlantic states have also sprung into action by forming the North American Electric Reliability Council. In late 1999, they began participating in this pilot program to share information regarding possible system intrusions with the FBI’s National Information Protection Center, which houses the FBI’s computer crime operations, says Gene Gorzelnik, communications director of the Princeton, N.J.-based council. Additional utilities from other regions of the country have also begun participating in the program. Because many util-

ities have prior experience working with the government to help avoid possible physical threats to their power systems, the concept of cooperating with the feds is not a new one, Gorzelnik says. However, ironing out the details of what types of information will be reported and how often is a key issue.

“You have to look at how to integrate without overloading the system operators with a lot of reporting procedures,” Gorzelnik says. “It becomes a problem of identifying what information needs to be passed to the government.” In addition to the details of the policies and procedures that need to be specified regarding reporting intrusions, the group is still developing the necessary trust for sharing information with the govern-



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ment, Gorzelnik says. "You want assurances that information you pass will be kept confidential and will not be made public," he adds. "The utilities and the government need to sit down and stare each other in the eye."

For example, it took several years for members of the National Security Telecommunications Advisory Committee (NSTAC) to develop the trusting relationship needed to reveal proprietary information to competitors, says Guy Copeland, vice president of NSTAC's infrastructure advisory program. The NSTAC was formed in 1982 to provide industry-based analysis and recommendations to the president on national security and emergency preparedness issues.

"HAVING A COMMUNICATION method among the railroads would be very beneficial." —Rick Holmes, senior director of security, Union Pacific



INVOLVED

CIOs interested in participating in the government's critical infrastructure protection efforts should call Nancy Wong at the Critical Infrastructure Assurance Office at 202 589-3236. For more information on infrastructure protection or to download a copy of the National Plan for Information Systems Protection, visit the CIAO website at www.ciao.gov.

POTENTIAL STUMBLING BLOCKS

Once the private sector overcomes its inherent resistance to sharing information with the government and settles on an information sharing model, the government's criti-

cal infrastructure efforts may be hampered by legal impediments, such as the Freedom of Information Act (FOIA). Designed to ensure citizens' access to documents detailing government operations, FOIA rules could hinder infrastructure protection efforts by exposing details of private sector system vulnerabilities to public scrutiny.

Despite the nondisclosure agreements among themselves, members of the Network Security Information Exchange, an ISAC operated by the NSTAC, are growing increasingly concerned that any information they share might be subject to FOIA requests, Copeland says. "They're willing to share information to work a mutual problem, but it has to have a national security reason to be classified," he says. "If it falls into the government's hands unclassified, it could be subject to the FOIA."

Challenges aside, there's a good chance the government and private sector will be able to work together. When the Y2K bug threatened the very same infrastructure that the government's plan aims to protect, CIOs had to convince their managers to pay attention to the issue and loosen their hold on some of their data. The infrastructure protection plan calls for similar cooperation. But this time, CIOs do not have a hard-and-fast deadline—an attack could come any day, and the consequences could be more lethal to a company's operations than Y2K ever was. **CIO**

Do you have an information-sharing success story or failure to share? Send it to Managing Editor Cheryl Asselin at casselin@cio.com. Heather Harreld is a freelance writer based in Raleigh, N.C.

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Wanted

How to find and keep a mentoring partner

“fIVE YEARS AGO I WAS LIVING IN A VAN.”

Not exactly the words you'd expect from a CEO. Brian Feucht, now the top dog at Hire Quality, a small but rapidly growing staffing and technology company in Chicago, started out in 1995 as an entry-level marketer, fresh from graduating college in California. He bounded up the ladder to become Hire Quality's first CIO, then in late 1999 was promoted to CEO after the former chief stepped down to lead the company's technology spin-off. The two weeks Feucht camped in his 1983 GMC conversion van while looking for a job in Chicago seem like a lifetime ago. Feucht didn't have the advantage of venture capital backing to jump-start his career. What he did have were smarts, ambition, luck and a few mentors. Really good mentors. "I went after mentors who were very high up, with experience in a lot of areas," he says.

Despite all the good they did for Feucht, the word *mentor* is unsettling to some. Do nauseating visions of a patronizing fatherly figure,

Reader ROI

- ▶ See how position, interests and goals affect the search for a mentor
- ▶ Know what you can and cannot expect from mentoring
- ▶ Learn why mentoring fails

B Y P O L L Y S C H N E I D E R

“I went after mentors who were very high up, with experience in a lot of areas.”

—Brian Feucht, CEO, Hire Quality

patting someone on the back and offering sage dictums from his leather-bound office chair come to mind? Things have changed—and for the better. Today, though mentors are often older and wiser veterans, it's not uncommon for people to find mentors who are their peers. In fact, even younger, less experienced workers can be valuable advisers to business veterans who need to learn how to operate in the Internet age. In keeping with these changes, organizational development folks don't like to use the term *mentor* so much anymore, preferring what they say are the more politically correct terms *adviser* or *coach*—even though the latter often implies a paid consultant.

No matter which word you choose, most define the term as someone who takes a vested interest in another's career development, helping her identify and achieve short- and long-term goals for growth.

But it's not a one-way street. Most people will tell you that these relationships work best when both mentor and mentee [forgive our use of this nonword for the sake of clarity] bring something to the table. Software company executive Nora Denzel has groomed rising high-tech stars in Silicon Valley for the 11 years she's been a manager. “Mentoring others has made me a much more effective manager,” reflects the 37-year-old senior vice president of product operations at Legato Systems in Mountain View, Calif. “It keeps me in touch with what people outside the company are thinking.” One of her former mentees, Helen, a software engineer who was in the middle of switching jobs at the time, helped Denzel understand what benefits and issues were important to a young recruit. Others who have mentored say giving counsel and recounting experiences reminds them of their own goals and forces them to think hard about whether they are heeding their own sound advice.

Given the mind-boggling pace of competition today, many IT execs don't do much mentoring or encourage it within their organizations—much less seek out mentors for themselves. “In my experience, they tend to be very busy trying to survive,” says Dave Phillips, president of The Peer Consulting Group in Seal Beach, Calif. “Perhaps they don't recognize the need or see how they can add value,” adds Phillips, a former division IS manager at Bechtel and CIO of Fluor Daniels, who now coaches CIOs. Perhaps also it's because matching mentors with mentees is no easy job, and relationships fizzle if the parties are



Brian Feucht's relationship with mentor **Rick Brennan** (right) has evolved into a long-term friendship.

not committed or clear on goals. And sometimes managers are just too proud or scared to ask for help. One of the most innovative and successful companies in the IT industry recently watched its own internal mentoring program collapse from lack of participation.

The following set of guidelines will help you make the most of these uniquely intimate career development relationships.

Starting the Search

Finding an effective mentoring match is an important first step—whether it's for yourself or for one of your staff members. Where to look will depend largely on individual needs, objectives and station in life. A green twentysomething like Feucht knew he needed older, wiser execs to point out the basics of business and IT management. When he was first promoted to CIO in 1998, he attended a conference and



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“Gail helped me understand what the executive VPs’ hot buttons were and where they stood on the issues.”

—John Szalewski, VP, Guarantee Life Insurance

met John Puckett, the former CIO of GTE Internetworking and now CIO at Toysmart.com. Feucht asked if he could call him for advice, and before long the two began to talk by phone on a weekly basis. “He taught me how to be a good manager and how to motivate staff,” Feucht says.

Around the same time, Feucht met Rick Brennan, a long-time technology executive who now heads software startup ZoomOn in San Jose, Calif. Brennan offered to help Feucht develop a strategic vision when he noticed the young manager struggling to explain his IT infrastructure during a Q&A session at a seminar. The two still talk every couple of weeks and Feucht has even spent vacations in Colorado

with Brennan and his family. “Most of my mentor relationships have started out casually, and later I decided that this is the kind of person I can learn from,” he says.

With 23 years of experience in IT, John Szalewski’s needs are different from Feucht’s. An applications development vice president at Guarantee Life Insurance in Omaha, Neb., Szalewski seeks mentors who can help him navigate the political nuances and communications challenges that come with senior executive roles in large companies. His relationship with his current mentor Gail Smith, senior vice president of administration at Guarantee, began in 1997 during meetings Szalewski scheduled with her to gain information for various projects he was managing.

Later, their discussions evolved from the work at hand to Szalewski’s desire to play better with the bigwigs in the company. The two now meet for lunch every week or two. “Gail helped me understand what the executive VPs’ hot buttons were and where they stood on the issues,” Szalewski explains. “This helped me in developing presentation materials and preparing for meetings in which I may be put on the spot to explain certain situations and make recommendations.” As a result, sticky subjects like getting approvals for new projects or budget allocations are now easier for Szalewski to address with senior management.

At the highest level—CIOs and other top officers—it gets even tougher to find mentors because there are fewer places to look and greater political implications for looking. Many executives who have reached the top do not feel comfortable asking for help, fearing that others will think them unfit for the job, says Richard Leider, a coach to Fortune 500 CEOs and the founding partner of the Inventure Group, a Minneapolis-based executive training and development company. People in this echelon of management tend to seek trusted advisers in their circle of family and friends, or discreetly hire someone like Leider. “It’s fairly covert,” he says.

Yet Phillips believes it’s reasonable for CIOs to find mentors in the business world. He thinks they should have two: a high-level influencer within the company and a fellow CIO in another company or industry. “You can learn a lot from bouncing ideas off people who have a different experience than you,” he says. Phillips and partner Jim Sutter hold monthly CIO breakfast roundtables in the Los Angeles and San Francisco areas to help facilitate networking. [CIO



John Szalewski and mentor **Gail Smith** meet for lunch nearly every week.

PHOTO BY JIM KRANTZ

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Alternative Mentoring

Who's on your board of directors?

The latest mentoring trend is to develop a "personal board of directors." The board is a group of three to six people you choose based on your career and personal goals. "Pick people who are good clarifiers, who listen; people who are catalysts and push for action; and others who are sages and have seen the larger playing field," says Richard Leider, a coach to Fortune 500 CEOs and founder of the Inventure Group in Minneapolis. The board can meet as a group, or individually with you, or both. Leider advises replacing board members every year or two as priorities change. The advantage? You get several points of view, and it requires a smaller time commitment from each adviser.

Can't find an adviser or someone to coach on your own? Consider an outside organization that matches mentors and those seeking them. For Margaret Porcher, vice president of data management services for I.C. System in St. Paul, Minn., a formal program was the kind of structure she needed to get motivated. Two years ago, she signed up with the local chapter of a mentoring organization called Mentttium, headquartered in Bloomington,

Minn. She says the program forced her to commit time to the relationship, since her employer sponsored her participation. Her boss then, the CIO of financial services provider Deluxe Corp., hoped Mentttium would help Porcher make the leap from middle to senior management (which, consequently, she has). Porcher took a personality and career survey that Mentttium used to match her with Judith Murphy, the CIO at United Healthcare in Minneapolis. The two worked together for a year, meeting for lunch once a month. Porcher says Murphy helped her learn how to focus better on the job and manage more effectively during chaotic situations.

In companies where internal coaches are in short supply, consider a group setting instead of one-to-one relationships. For example, five or six employees from different departments might get together with two senior managers on a regular basis to discuss topics related to career growth, says Beth Gulas, president of WorkForce Management in Wellesley, Mass. "It maximizes mentors, and you get some transfer of knowledge across disciplines." —P. Schneider

also hosts breakfasts for readers around the country. To participate, contact Lisa Kerber at kerber@cio.com.]

Finding your Match

It doesn't matter so much where you find a mentor, as long as you choose someone who will push your development. "If you pick someone just like you, you'll get reinforced rather than critiqued," Phillips notes. Like many other sources, Phillips also suggests avoiding the boss. A more neutral relationship with someone outside the immediate work circle allows people to talk freely without fear of retribution or being judged.

The decision of whether to look for a mentor inside or outside the company depends on goals: if it's to climb the corporate ladder, an insider may be the best bet. But for longer-term career development, outsiders provide a valuable neutral opinion. For Feucht, working with outsiders allowed him to critique his company's own internal strategies and philosophies, and adopt new approaches. "I was able to break that [company's] thought pattern," he says.

Should the mentor and mentee come from the same industry? "To learn industry knowledge, processes and company practices, or to gain political savvy, a good mentor in the industry seems ideal," Szalewski says. On the other hand, he observes, executives from other industries are less likely to have preconceived notions

or rules about how to approach problems. The adviser "may contribute a breakthrough idea that someone ingrained in the industry wouldn't have conceived," he says.

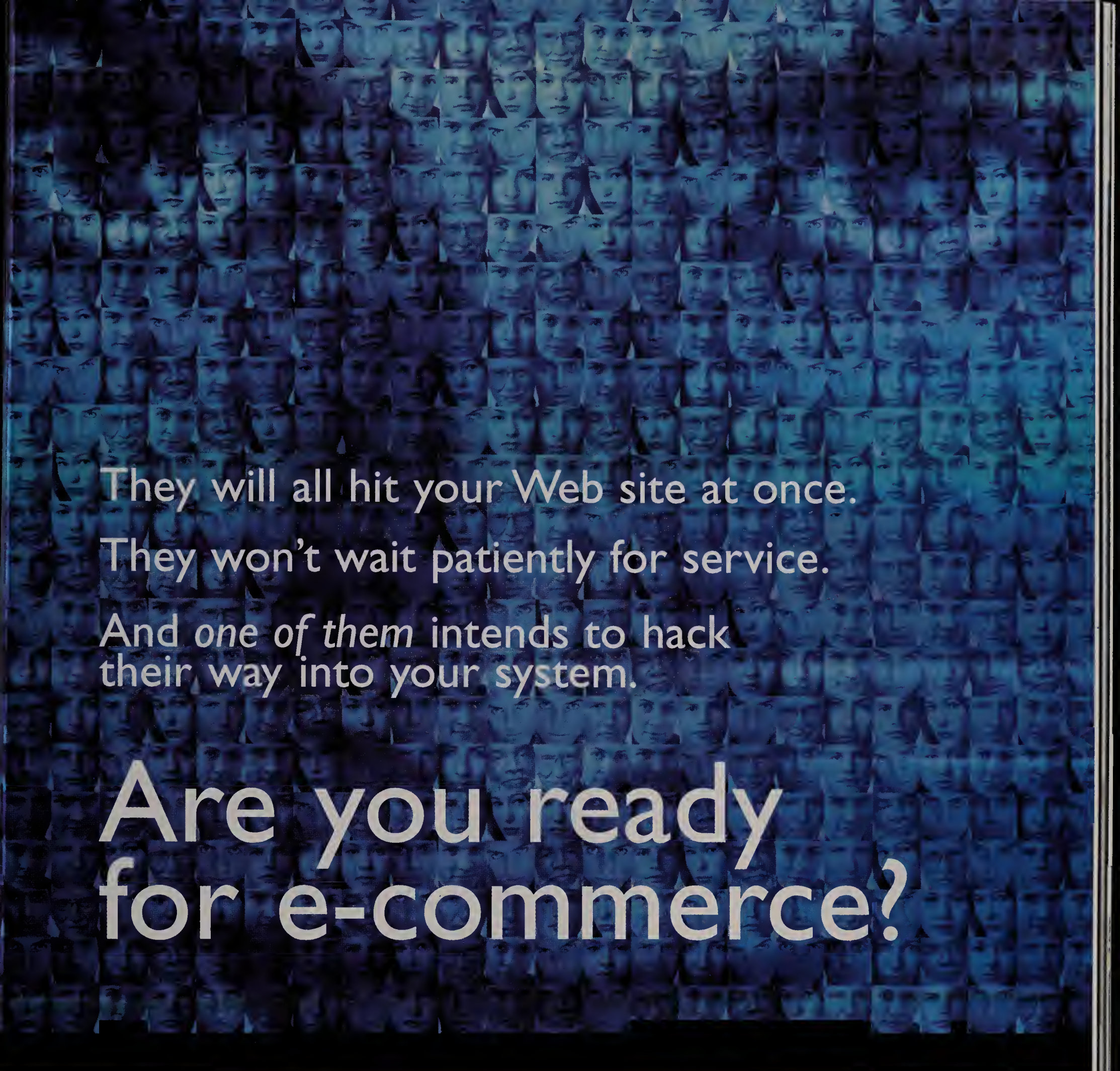
Other considerations are more personal. For instance, are women better off with female coaches? Contrary to popular opinion, some women either feel more comfortable working with men or don't take gender into consideration when looking for a mentor. But male-female relationships can be problematic, says Beth Gulas, president of WorkForce Management in Wellesley, Mass. Coworkers may raise eyebrows if a man and woman are spending regular sessions behind closed doors or at lunch, she warns. "The rumor mill can get ugly." Legato Systems' Denzel doesn't think the gender issue is a big deal. She has had male mentors and has been a mentor to men and says the only difference is women often develop closer relationships with each other through their tendency to talk about more personal issues like family.

Once you've found a good fit, there are ways to strike up a relationship without sounding like a dork. As Denzel points out, people love to talk about themselves. "If I wanted to have lunch with a CEO in the Valley, I wouldn't ask him to be a mentor. I would just express my interest in his merger strategy or whatever."

Mentors also need to be picky about whom they choose to help. "As it takes time to be a worthwhile mentor, it might be prudent to accept only those people you think have promise, or you like and relate to," Phillips recommends. While the obvi-

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Mentoring

ous expectations of timeliness, strong communications skills, commitment and enthusiasm are all important attributes of a mentee, Denzel says she also looks for someone who embodies the same qualities as her good friends: loyalty, integrity and honesty.

Setting the Agenda

Once the two parties find each other, what are the unwritten rules for working together? In truth, there are no hard-and-fast dictates except one: Both individuals have to understand the goals and expect-

tations of the relationship upfront. It may sound like a business transaction, and in many respects it is. Mentors are busy people in important jobs and can't be bothered by a junior person who doesn't have a specific agenda. "Asking for general career direction may not be a clear enough goal," Gulas says. A better approach is to come to the table with a list of current challenges at work and a few goals for the year, such as improving relationships with direct reports. Typically, the issues that mentoring partners discuss are soft skills relating to people, emotions, culture and strategy, rather than technical skills, which can be learned from courses or books.

When the Inventure Group's Leider works with his CEO clients, the two put together a yearlong road map with two or three goals and an action plan and timetable for achieving them. For instance, the client may want to improve his relationship with the company's board and gain buy-in for a new business plan. After creating the

*Legato Systems' **Nora Denzel** (right) and her mentee **Chitra Vizek**, a marketing director at Adaptec, met two years ago through a national mentoring program called Women Unlimited.*



*"Mentoring others
has made me
a much more
effective manager."*

—Nora Denzel, Senior VP, Legato Systems

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map, Leider says the mentee should allot time every day to work on the action plan—he recommends 30 minutes—and then report on his progress at each meeting with his adviser. “The daily practice against the plan accelerates your learning curve...and it keeps your advisers happy and interested too.” The action plan could include reading books, practicing presentation skills, meeting with key stakeholders or keeping a journal.

Logistics *do* Matter

How often should the parties meet? Consultants advise setting a specific and short time frame: six to 12 months is reasonable, with meetings once a month or more if possible. Mentees should offer to come to the mentor’s work site and have the flexibility to schedule times in the early morning or evening, Denzel says. “In general you need to make it easy for the executive,” she says. “But if you establish a rapport with them, you can get unlimited time with someone who enjoys being with you.”

For instance, Denzel says she’s gone to charity events with some of her advisers.

Getting away from the office—even for a walk at a nearby park—can help people interact more freely and creatively, and perhaps build the foundation for a deeper, long-term relationship.

Nevertheless, mentors can’t always find time for face-to-face meetings. Gulas says she’s seen successful relationships where the two parties conversed only by phone. However, she does have one caveat: “E-mail is my least recommended form of communication because too much is misinterpreted.” Yet for some people, it can work well, and is something the parties should explore in the beginning.

Behaving *for* Success

You don’t have to be best friends with your mentoring partner and, in fact, developing any form of social relationship is not required. However, Gulas says mentees should present themselves intelligently, show tact, be responsive to feedback, be a team player, remain open to creativity, demonstrate confidence and participate fully. For the most part, the mentor has those same obligations plus others.

No matter how busy they are, mentors who don’t return phone calls or continually cancel meetings are not suited for the role. Beyond the time commitment, mentors should have an innate desire to help others. They should be good listeners, tolerant, encourage risk and expect failure, Leider says. A good coach should also look at the

Checklist

Find a potential mentor/mentee in

- Your own company
- Another company
- Another industry
- Conferences and other networking events
- A mentor-matching service

Check for fit in

- Experience
- Business and personal values
- Ability to commit the time
- Clarity of purpose

Set agenda with

- Goals and objectives
- Expectations and ground rules
- Communication mechanisms
- Time span and frequency of contact

Check in: How’s it working in

- Meeting objectives?
- Meeting commitments?
- Honoring the “contract”?

relationship as a chance to learn something too. “The death knell of mentoring is sermonettes. That’s the mentor’s viewpoint, as opposed to bringing out the natural potential in people,” he says. Szalewski agrees: “At points, you may trade places and become the mentee.”

Mentoring *can* Flop

“Where it gets mucked up is when [you put your] future in the hands of someone else and you’re asking them to influence others on your behalf,” Leider says. In other words, do not expect a job or promotion or key contact from your adviser. That’s not to say a mentor couldn’t offer her mentee a job—but keep in mind that such offers can cause tension if one or both parties decides it’s not a good fit. Conversely, mentors should not hit up mentees for business leads or favors.

Mentees should consider advice from their mentors and thank them (profusely) for it, but they are not obliged to take it. This is another potential sore point. “The adviser can’t expect to be in control,” Leider says.

Hire Quality’s Feucht learned this lesson

when his mentor, Brennan, advised him to replace his back-end systems. To Brennan’s chagrin, Feucht decided not to take the advice because he was worried about the impact the change would have on several time-sensitive projects underway. Once he explained the situation in detail, Brennan had no qualms about the matter. Ultimately, Feucht says he is accountable for his own decisions. “Mentors are not your boss, and they can’t run your business for you.”

Generally, coaches who push their ideas or philosophy as the gospel will not win points. “Mentors go wrong in wanting everyone to become like them,” Denzel observes. “You have to listen and adjust your advice.” Mentees should also remember that the relationship does not revolve solely around them. There are little things mentees can do to reciprocate, like sending an article that might help the mentor in his job.

Loose lips are another concern. Until both parties establish a level of trust with each other, it’s wise to be discreet. In Silicon Valley, where it’s not unheard of for companies to require employees’ significant others to sign nondisclosure agreements, Denzel worries that her anecdotes of work situations will get back to former employers or coworkers. “I don’t want young people in the Valley running around with my stories!”

Bottom line, these relationships are about trust. It’s a good idea to draw up a few guidelines for both parties regarding time com-



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Left: Bob Barrett (right) helped John Regan manage conflicting priorities from senior management. Center: Gene Rindels (left) learned from Dick Fishburn how to motivate peers to change during tough times. Right: Gail Smith explained executive hot buttons to John Szalewski.

game successfully and provide smart project leadership and the keys to motivating IT staff and managing user expectations.

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mitment, goals and confidentiality. Check in with your partner on a regular basis to see what's working and what's not. If one party blatantly violates the "contract," consider ending the relationship. Also, as several sources suggested, once two people stop learning from each other—for whatever reason—it's time to amicably part ways. Sometimes, personal values and chemistry don't mix well, or the relationship just goes stale.

Mentoring is not for the weak at heart. It requires time, nurturing and patience, and there are no guarantees of results. But if you're determined enough, mentoring will pay off in the end. Take it from Denzel, who learned the value of being proactive early in her career as

an engineer at IBM. With the goal of running her division someday, she asked the division manager if she could job-shadow him for a week, and he accepted. "I was fascinated with his job—and by his trust," she recalls. "He let me sit in on meetings with him, and he really put himself out on a limb by giving me private information. He was candid, and I learned much more because of it." Ten years later, she was the division manager. **CIO**

We want to know your secrets for mentoring success. Write to Senior Executive Editor Richard Pastore at rpastore@cio.com. Polly Schneider is a former senior writer at CIO.



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Some consultants
are more interested
in their next sale
than their current
investment

Consulting Demons

by Lewis Pinault
Harper Collins Publishers,
New York City, 2000, \$26



BY LEWIS PINAULT

The devil You Don't Know

Reader ROI

- ▶ Learn trade secrets your consultant doesn't want you to know
- ▶ How consultants manipulate clients for their gain
- ▶ Traps to avoid when dealing with consultants

Lewis Pinault's new book, **Consulting Demons**, offers a none-too-flattering view of the consulting trade. *Consulting Demons* certainly is not the first attempted exposé of management consulting malpractice—1998 alone brought us *The Witch Doctors: Making Sense of the Management Gurus* and *Dangerous Company: Management Consultants and the Businesses They Save and Ruin*. Pinault's entry into this genre is interesting because of his firsthand experience as

the perpetrator of many of the unethical practices he describes. In the following excerpt from Chapter 11, Pinault gives an example of some of his own trickery. He also offers some cautionary insight for would-be clients, noting various tactics consultants use to create further need for their services. (Names in quotation marks, following the book's convention, are pseudonyms.)

One of the more extreme examples of stretched truths and utter fabrication in the name of practice group pride, in my experience, came during my own brief interval with Arthur D. Little in Singapore, a time in the mid-1990s when I had left Gemini Consulting in Japan and impatiently awaited Gemini's

continued expansion to Southeast Asia.

"Bruce Bingham" called me early one hot and wet Singapore morning. We did not get many unexpected phone calls in our pleasant little outpost.

"Dr. Pinault, how long have you been our steel practice representative in Asia?"

"Lewis is fine, really. And it's mister, any-

way, unless I can finally figure out a way to get back to school."

"Really? Seems like everyone around here is doctor somebody."

"I can imagine. And to answer your question, since never, as far as I knew, but I could certainly be wrong."

"Well, I have you down here in the new directory as our steel practice rep. Your capsule biography says you worked for Nippon Kokan, the steel tube maker."

"Well, that's true. I was with NKK about 10 years ago, but I worked as a business analyst for new marine projects, mostly heavy engineering, that kind of thing. I toured the new integrated steelworks at Keihin a couple of times. Pretty amazing. Man-made island, iron ore in one end, sheets and tubes out the other. Big furnaces. It's all supposed to be ultramodern, but it still struck me as awfully hot and dangerous."

"Good enough! At least you know what an integrated steelworks is. How close are you to Bangkok?"

"Not far. We cover it occasionally and have a new job coming up there soon, the city waterworks I think."

"Well look, Lewis, I have a presentation to make there in a few weeks, and I'm wondering if you could help me a little with the logistics and help me work the crowd."

Yuck. Escort services for visitors rarely turned out productively. Bangkok was sown with land mines for the would-be visit manager: Demands for the rare, lewd and exotic could get out of hand. Oh well, a duty for the homeland, I reasoned.

"Yes, well, sure, let me know the dates. Try to bring a little library of steel materials we might use as handouts. We'll set everything up from here. Look forward to seeing you and all that."

Two weeks before Bingham's talk, we were on the line again.

"Look, Lewis, there's no reasonable way to say this, but I can't make it. We have a new proposal here at National Steel, and we're all over it. It's very hot, competitive as hell."

"I'm really sorry, Bruce. I think you might





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have gotten a lot of mileage for your practice out of the visit. I'll work on all the cancellations, maybe we can find something similar for you elsewhere in the region in the next couple of months."

"No, no. No cancellations, except for me. We've been booked at this thing for almost a year. All the investment banking steel analysts and experts are going to be there. *Metal Bulletin's* doing this huge piece on it. We can't miss this chance; our credibility will be totally shot."

I started to get a very bad feeling.

"Are you planning to send someone else, Bruce?"

"We really can't from here. Lewis, I'm sorry, but we've got to ask you to cover. I'll send you all the materials; we can have a couple of teleconferences and drill everything. You can charge all your time to the practice, take a week to get up to speed, more if you need it."

I knew I would do it. There was even a certain perverse thrill that went with pretending to have any understanding of this at all. But I had to at least try to be rational.

"Bruce, really, you've got to be kidding. 'Peter Lynch' and all those other steel gurus are going to be there, like you said. And from what little reading I've done so far, minimills

are all the rage now. They're going to tear into the presentation, whoever gives it. The questions will be murder."

"You'll do fine. I'll coach you on everything. When you can't answer, just have them get back to me."

Reluctantly, I agreed. I received a faxed copy of Bruce's presentation that night. It was full of arcane process diagrams, unfathomable vocabulary and calculations, names of companies and products I had no idea existed. I nearly puked.

I began leaving constant messages for Bruce, which were invariably never returned,

(continued on Page 284)

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Client Beware!

Lewis Pinault offers **seven** examples of consultant trickery



1. Consultants seek to make clear that they do not have inconvenient conflicts of interest. While attorneys, auditors and even investment bankers confront heavy internal regulation and some external regulation and scrutiny in the course of their work, consultants ride free, with virtually no accountability for their actions—beyond getting paid or not. In the course of building one-stop shopping for professional services, consultants become a natural, relatively risk-free wedge for aggressively introducing a full gamut of more technically complicated services.

2. Firms are prepared to position every member of the team as a consultant and have every consultant prepared to avow any needed practice group affiliation. When strained for manpower and talent, firms can very effectively draw on their enlarged nonconsultant ranks to fill out the team. Using the main-line consultants as the opening wedge, other professionals can be brought in to play as consultants themselves when the clients' appetites focus on the size and quantity of the core consulting effort. A qualified attorney may know more about international joint ventures than her consulting cousin, for example. But there is a world of difference in introducing her with a consultant's business card and title as a consultant who happens to carry legal qualifications than as just another lawyer looking to exact transaction costs from a deal. Every member of the team is likely to have capsule biographies prepared to attest to experience in any practice area, making liberal use of others' case experiences.

3. Consultancies purvey information systems strategies with abandon. While IS continues to require years of intensive training to master, and conforming a given system to a given client's needs remains largely a sophisticated art form, trust in generalist consultants runs high enough to piggyback the principle of an enormous systems sales on the back of a general consulting engagement. Expert-to-expert sales, with technology consultants selling to client information officers, are generally discouraged.

4. Consulting houses highlight that accountants and lawyers are risk-averse by nature. Clients continue to be attracted by the unpredictable character and charm of the presumed-to-be adventurous consultant. With a wave of the hand, consultants can invoke the necessity of a deeper technical expertise as a necessary but boring, naturally resulting component of their own work. The fact that such work may well be 10 or a hun-

dred times the consultant's cost need not be confronted till far into the engagement. When the client's own maximum risk threshold is approached, the more risk-averse members of the team are then invoked as an assurance of disciplined control.

5. Consulting firms trample accountants' natural mistrust of consultants and their instinct to protect clients. In a large merger of consulting and accounting talent, the accountants stand to gain from the consultants' profitability, but not from their skills or referrals; no one will switch accounting services just because they have engaged a given consultant. The reverse is true for the consultants, however: Returns on accounting manpower are unattractive, but the accountants' goodwill with clients can represent a gold mine of new sales opportunities.

6. Consultants' high client-hiring eligibility is used to further infiltrate and penetrate the sale site. In extension of the approach of seeding client sites with a firm's own alumni to better anchor future sales, professional services conglomerates infiltrate the management ranks of their largest clients with strategy consultants. Increasingly, under the influence of consulting propaganda that information systems are key strategic differentiators for a client's future success, the decision-making power for the highest-budget strategy-and-systems assignments rests more within the CEO and corporate planning groups than with the information managers themselves.

7. Consultants' experience in flexible, extensible fee structures is used to price the whole larger deal. Pricing a strategy engagement has always been an art form, one enabling its master practitioners to expand task definitions to neatly encompass the last ounce of available manpower and lap at the exact threshold of client budget tolerance. Information and accounting systems have an unfortunate transparency to their task definitions, resisting ready expansion, and the dollar-for-output costs of each micro task are almost unavoidably general knowledge. For these reasons alone strategy consultants are typically put in charge of technology sales. Leaving it to the selling professionals to scope the work and regroup the tasks in a way that defies early technical scrutiny is a typical ploy. Including high-billing-rate consultants on every technical task sub-budget in a show of strategic integration ensures they get out of the way and share their budget excess to enable the work to really get done, with plenty of inflated fees to go around for all the consultants.

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(continued from Page 280)

unless at some weird hour when only a voice-mail capture was possible, and then only to say we'd talk later. I was sorely tempted to drop the whole impending fiasco but knew that my unsympathetic local managing director would delight in the failure of the time he felt I'd already wasted, and I did not want to lose my only line of support back in the States. I would simply be a good soldier, I decided.

I flew to Bangkok on the last flight the day before the presentation, only half prepared to pull off the sham.

The next morning was a deeply satisfying exercise in theatrics. I tried to ease my own tension by telling the audience that as a substitute speaker I was about to learn what my grandmother's vaudeville ventriloquism profession must have been like, but not a soul seemed to comprehend the concept. I plunged on, giving a breezy, authoritative run through all the presentation material, perfectly timed, doubt and certainty expressed in all the right places, excitement and enthusiasm delivered with utter authenticity.

The reporter from *Metal Bulletin* fairly glowed. Even the famously critical Peter Lynch looked friendly.

"Lewis, that was a really helpful review of miniprocess applications. But how well would they work here? Who are the key players that might help interested investors in Southeast Asia?"

Bruce had prepared me on both these questions, the first because of my own prompted curiosity. I gave a full-length review and handily disposed of the audience's other, easier questions.

Then I got a scare.

"Dr. Pinault, could you give us just a few examples of minimills in the Asian region that might be suited for the kind of approach you've modeled? Who are some of the players today that might begin looking more closely at this?"

Yikes. I did not even know the name of a single small mill in Asia, much less which might make use of the dynamics I had just explained in blind ignorance. I was inspired by a trick-of-the-trade I learned from my



mentor at Gemini.

"Well, I would love to share some examples with you, but frankly, several of these are our own client situations under development now. Under a more formal arrangement, however, I could disclose some of the names and even details of their operations, with their agreement, of course."

In a few days I would learn that I had just made a sale for Bingham.

I got off the stage as quickly as I could. I felt as if I had been possessed, speaking ancient tongues in complete demonic control. Peter Lynch came up to say good-bye.

"That was either the greatest pinch-hitting job I ever saw, or the greatest [B.S.] artistry

ever." He clapped me on the shoulder and began to walk off. "I don't want to know which."

Neither did I. **CIO**

Lewis Pinault's accomplished management consulting career included positions at the Boston Consulting Group, Gemini Consulting and Coopers & Lybrand, where he was a financial institutions partner. After earning new credentials in law, planetary science and futures studies at the University of Hawaii, he is now pursuing applications of international public law and policy to both outer space and cyberspace, in the formal context of alternative futures. Currently, he is at work on a new book detailing the adventures of Internet-driven consulting.

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Emerging technology

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The Future of Phone?

Voice-over-DSL offers cost savings—and considerable risk

BY DANIEL SWEENEY

IT'S AN AXIOM of the IT world: Don't muck with your phone system. Any given enterprise, can easily demonstrate horrendous losses when its phones go down for even a day. Any longer and your clients will likely assume you're out of business. So why would you even consider

entrusting your local phone service to companies that in some instances didn't exist a year ago, touting technology that is largely without a track record?

According to the purveyors of that technology, namely voice-over-DSL (VoDSL), which

Edited by Christopher Lindquist. Send your thoughts and ideas for future columns to et@cio.com.

voice-over-dsl...faster response...stereo teleconferencing



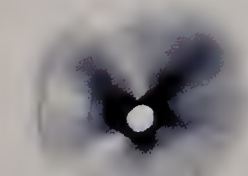
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packs multiple voice channels into a single copper line, price is the key. The industry claim for VoDSL—nearly impossible to verify, given the paucity of customers at present—is that local service costs will typically run 30 percent to 50 percent less than plain old telephone service (POTS). Most of the VoDSL vendors also offer long-distance telephone service and high-speed data access as further lures to new customers. Many can even provide extended wide area network connections over frame relay or asynchronous transfer mode. As a result, the vendors are apt to further discount

customer-premises equipment for implementing VoDSL.

“The initial DSL service providers have concentrated on building high-speed data services,” Gleave explains. “And they’ve chosen equipment accordingly.” And moving into voice requires features that most first-generation hardware doesn’t provide. But, Gleave says, the revenue potential of local phone service (approximately \$52 billion versus \$8 billion for data services) provides a powerful incentive for competitive local exchange companies (CLECs)—such as Covad Communications and Rhythms NetCon-

Any given enterprise can easily demonstrate horrendous losses when its phones go down for even a day.

local phone service as bait for the total communications package.

It’s also likely that VoDSL pricing will be consistently lower than POTS simply because VoDSL requires considerably less physical infrastructure than conventional local phone service. Existing VoDSL platforms can transmit eight to 16 voice channels simultaneously over a single phone line, and technologies exist that would easily permit a quadrupling of that figure. Within an existing in-building phone system, this means that adding a phone line or multiple lines simply involves adding a DSL modem.

Delays, Delays, Delays

So far, however, voice-over-DSL has been among the service offerings of not more than a handful of the scores of DSL providers scattered across the country. Indeed, actual commercial deployments probably number no more than a dozen, according to Stephen Gleave, vice president of marketing for Los Gatos, Calif.-based Jetstream, a manufacturer of

connections, which lease phone lines from local telephone companies and then resell the bandwidth to their own customers—to move into voice.

VoDSL also makes that move a real possibility for the first time. Despite the clear intent of the Telecommunications Act of 1996, competition for local voice traffic has scarcely appeared, primarily because of the dependence of most CLECs on leased capacity from incumbent service providers, such as BellSouth and US West. But VoDSL changes the whole equation. CLECs must still rent copper lines at an average of \$20 per month. But now that \$20 buys as many voice channels as the VoDSL technology will support—16 today but many times that in the foreseeable future.

The capability of VoDSL to leverage existing copper more efficiently may even force the regional Bell operating companies to adopt the technology. Robert Kelley, general manager for voice-over-DSL at Englewood, Colo.-based Rhythms, a nationwide provider of DSL data

new products

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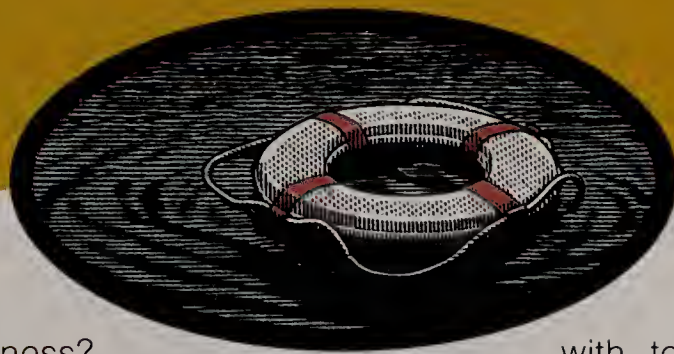
TotalChain, the company’s XML-based supply chain tool. The product claims a variety of features, including the capability to operate via a browser, fax or e-mail interface; client/server authentication for security; online billing and transaction tracking; warehouse and transportation fulfillment; and integration with applications from Baan, J.D. Edwards, PeopleSoft and SAP. E-Sync can also host the TotalChain system on its own servers, reducing many hardware and implementation costs. Pricing varies depending on the application. For more information, visit www.e-syncnet.com or call 203 601-3000.

Wireless Torture Test

The power of a cell phone increased dramatically with the introduction of the Wireless Application Protocol (WAP). No longer just voice—and sometimes e-mail—communicators, WAP-enabled phones become portable, wireless data access devices. Now **Segue Software** offers a way to make sure that WAP applications will work as expected without time-and-money-wasting trial and error. **SilkPerformer** lets you test the performance of multiple

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services, goes further, predicting a general replacement of POTS by VoDSL, at least in the business sector. "I see the [incumbent local exchanges] as being very vulnerable if they don't adopt the technology as well."

DSL Gets a Voice

The notion of using DSL for voice is hardly a stretch, since the technology was originally developed to support streaming audio and video so that the telephone

companies could compete in the cable-television market without changing the physical layer of their networks. Subsequently, providers have used DSL to simulate T1 connections and to offer high-speed Internet access and virtual private network connectivity, primarily to small businesses and consumers.

DSL uses digital signal processing techniques to extend the information-carrying

cant cost savings for itself and, by extension, for its customers.

Transmitting voice over a DSL connection is a fairly trivial exercise. According to Stefan Knight, director of product marketing for CopperCom, a Santa Clara, Calif.-based supplier of VoDSL voice gateways and IADs, "There's no major technical hurdle to overcome—it's not like you're building a terabit router or something." Still, vendors must design specialized equipment for the purpose, including DSL access multipliers, which can treat voice separately from data; DSL modems that dock with small PBXs and generate the signals required by the telephone switch; and voice gateways that direct the VoDSL traffic into the public telephone system.

Customers? Service?

The very recent arrival of such advanced equipment helps explain why some DSL providers have delayed their move into voice. But while VoDSL is primarily the province of relatively tiny companies (such

The notion of using DSL for voice is hardly a stretch—it was originally developed to support streaming audio and video so that the telephone companies could compete in the cable-television market.

capacity of ordinary copper wire. DSL service providers usually assign only a single analog voice channel per line and use the additional bandwidth for data. But all or part of the data channel can also carry voice. Eight standard 64-kilobit-per-second voice channels require just over one-half a megabit of throughput—well within the capabilities of an average DSL connection. By using a single line to carry multiple voice channels, the carrier achieves signifi-

as Rio Communications in Eugene, Ore., Network Plus in Quincy, Mass., and Picus in Virginia Beach, Va.), at the moment a few nationwide DSL service providers, such as San Francisco-based Northpoint Communications and Rhythms, as well as Santa Clara-based Covad, are giving the technology a trial run. Such companies are exceptions, however. "The big guys are holding back until the technology is thoroughly proven," says Brett Sheppard,

new products

requests to applications on a WAP gateway or Web server prior to actual deployment. Pricing starts at \$19,500. For more information, visit www.segure.com or call 781 402-1000.

An Eye on Your Network

As your network becomes more mission critical, keeping it running smoothly is increasingly important. To help prevent problems before they start—and identify causes when they do—**MediaHouse Software** recently unveiled version 6 of its **ipMonitor** network monitoring package. IpMonitor installs as a Windows NT service that you configure to inspect network services or devices on a regular schedule. If ipMonitor detects failures or service degradations, it can alert network administrators via a variety of means, including phone, pager, e-mail and network broadcast. The product can also automatically restart services, reboot systems and activate external recovery tools. IpMonitor sells for \$695. Download a free trial, and get more information at www.mediahouse.com or call 819 776-0707.

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a former analyst with TeleChoice in Denver. "In my opinion, they're wise to do so, because it still has some problems, particularly with echo cancellation. We don't expect fully carrier-class equipment until the third or fourth quarter of this year."

The Antenna Group, a New York-based early adopter of Network Plus's VoDSL service, confirms Sheppard's misgivings—at least in part. "We've had ongoing problems interfacing the Jetstream subscriber unit with our PBX," reports former Technical Director Bill Meyer. Meyer has no plans to drop the service, however. "We're an Internet content delivery service, so we're willing to try new technology. Network Plus has been willing to hold our hand, and the service is much cheaper than what Nynex was offering."

PaintingsDirect.com, a New York City-based online art gallery, has been more fortunate with its Network Plus service. "We really like it," says John McLane, director of operations. "Voice quality equals that of ordinary phone service, and the cost is much less. There have been a few glitches, but you expect that in a new service."

Such mixed verdicts will undoubtedly cause many enterprise users to hesitate. And surprisingly, one equipment manufacturer's representative—CopperCom's Knight—believes the wait-and-see approach is warranted. "People see the promise of tremendous savings, and they're skeptical—as well they should be. We build to five nines reliability, but not everyone does." But Knight adds, "The incumbents are already buying equipment to stave off the CLECs. It doesn't matter who's offering the service; it's simply 16 times cheaper in terms of line charges. And that's why it will ultimately become the norm."

Dan Sweeney is a technology writer based in Burbank, Calif. He can be reached by e-mail at dswee34359@aol.com.

REVISIT IVR

Phones Still Don't Listen

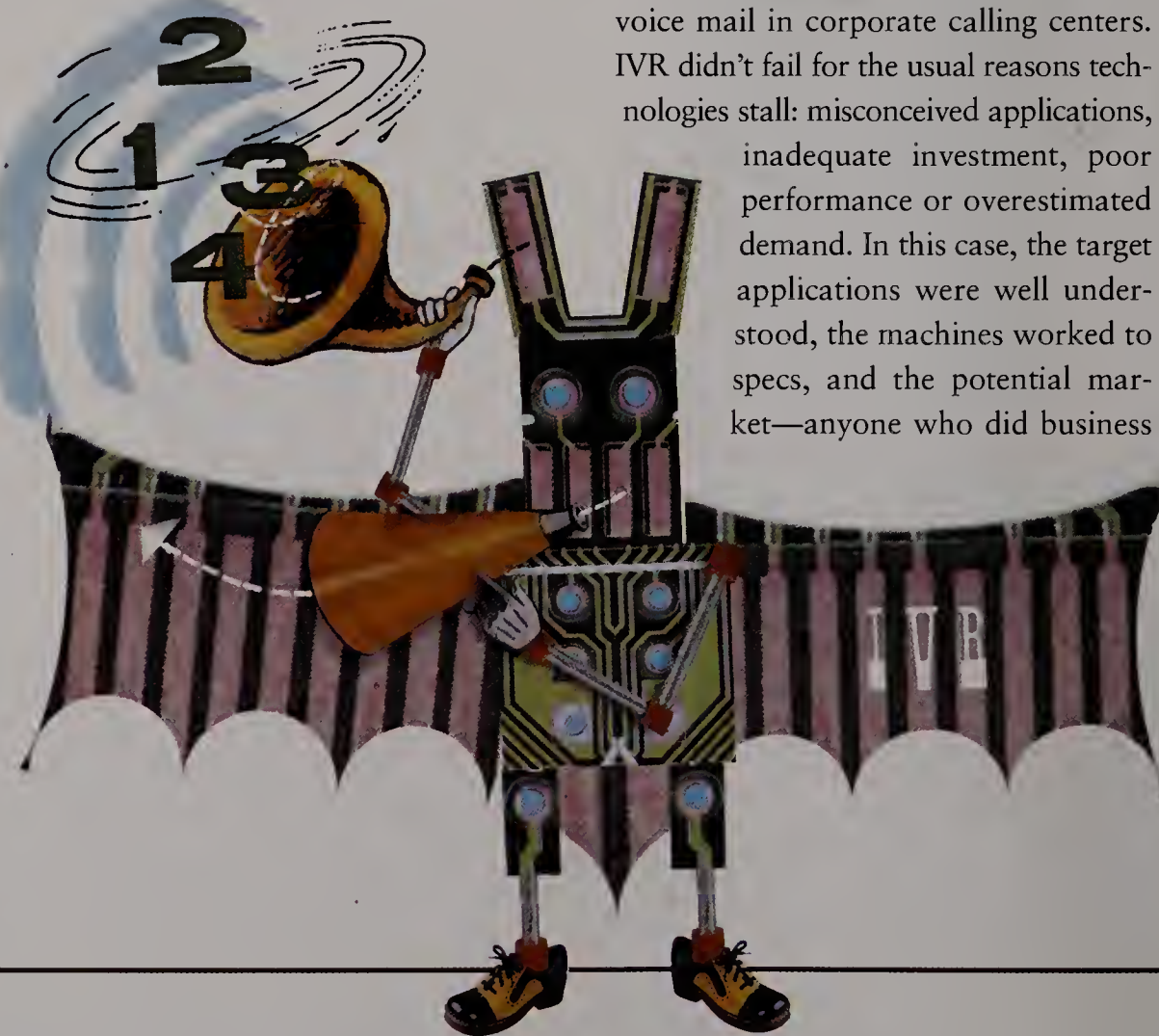
Interactive voice response and speech recognition make slow progress BY FRED HAPGOOD

IF LIFE HAD ANY LOGIC to it, computers would have been developed by the telephone industry. Instead they grew up everywhere but. First they were in the military, then in universities and finally in internal business applications such as payroll and accounting. In fact, telephony and information processing grew up isolated from each other, with different technical perspectives and vocabularies. Few engineers understood both.

As a result, today's great communication technologies have found it difficult to...communicate. Computers could phone us after a fashion, using prerecorded words or voice synthesis, but managing a computer from a phone has always been problematic.

In February 1991, *CIO* ran an article declaring that this wall was about to come down, and the age of "anytime, anyplace" computing would begin. We based our optimism largely on a rash of agreements by industry standards groups. These agreements, for instance, associated certain functions with specific touchpad actions: Press 1 to listen, 2 to save, 3 to erase and so on. Vendors hoped that this standardization would make it easy for users to remember the right key to press at the right time and therefore extend the voice-mail model to everything we think of today as e-commerce: perusing catalogs, placing orders, requesting customer service and more.

But interactive voice response (IVR) never spread far from its primary niche—voice mail in corporate calling centers. IVR didn't fail for the usual reasons technologies stall: misconceived applications, inadequate investment, poor performance or overestimated demand. In this case, the target applications were well understood, the machines worked to specs, and the potential market—anyone who did business





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over the phone—was already huge and getting larger every day. The problem was us—humans weren't up to remembering sequences of key presses, standards notwithstanding. (It didn't help that phone makers also had an annoying practice of building their touchpads into the handset, forcing users to keep pulling phones away from their ears to enter commands.)

In theory there was an alternative: speech recognition. Unfortunately that technology had the exact opposite problem of IVR. Humans loved it, but machines couldn't handle the job. Even after

piled tens of thousands of speech samples. Theoreticians worked to improve the algorithms that differentiate speech from noise. And programmers developed ways to make use of the faster processors that kept arriving. Circa 1997, functional speech products, such as Dragon System's NaturallySpeaking, IBM's ViaVoice and Wildfire Communications' WildFire, began to appear.

These products let individual users—often after a lengthy training process—dictate text and commands to their desktop PCs. But more recent products can work

A computer has to do more than recognize phonemes; it has to understand the semantics as well. It has to know what the decoded words mean.

decades of research, speech recognition still couldn't deliver acceptable performance in 1991. "There are thousands of ways to make a phoneme [speech's smallest phonetic unit]," explains Bill Meisel, president of TMA Associates, a Tarzana, Calif., consulting company specializing in speech recognition. "The sound that we hear is a product of the geometry of the voice box—which is different for every person and affects the phonemes just spoken, the ones that will be spoken next, how much noise there is in the environment, the speaker's meaning and his or her age, physical and emotional state, and many other factors." Up to the early '90s, the difficulty of building machines capable of handling this swamp of verbiage had pretty much confined speech-recognition technology to *Star Trek*.

Meanwhile, a huge market was left waiting. But during the last decade, speech-recognition companies made significant investments. Field-workers com-

with multiple speakers and can be used over networks, including the Internet. For instance, Universal Studios, the entertainment giant in Universal City, Calif., has replaced its internal voice mail directory with a speech-recognition system (by Philips Speech Processing) that recognizes more than 10,000 names. TelSurf Networks is selling an "audio browser" that uses recognition to navigate through a "speech portal" that delivers audio e-mail, news, stock quotes, radio programs, calendar entries and more. Several companies, including Brooktrout Software and InterVoice-Brite, now sell tools that allow Web navigation through speech—replacing the keyboard and mouse. Users either speak into a microphone and deliver commands using voice over Internet protocol, or they call a number on a second phone line and speak over that.

Nearly 10 years after our story, the merger may finally be at hand—but it won't be easy. Carl Strathmeyer, director

new products

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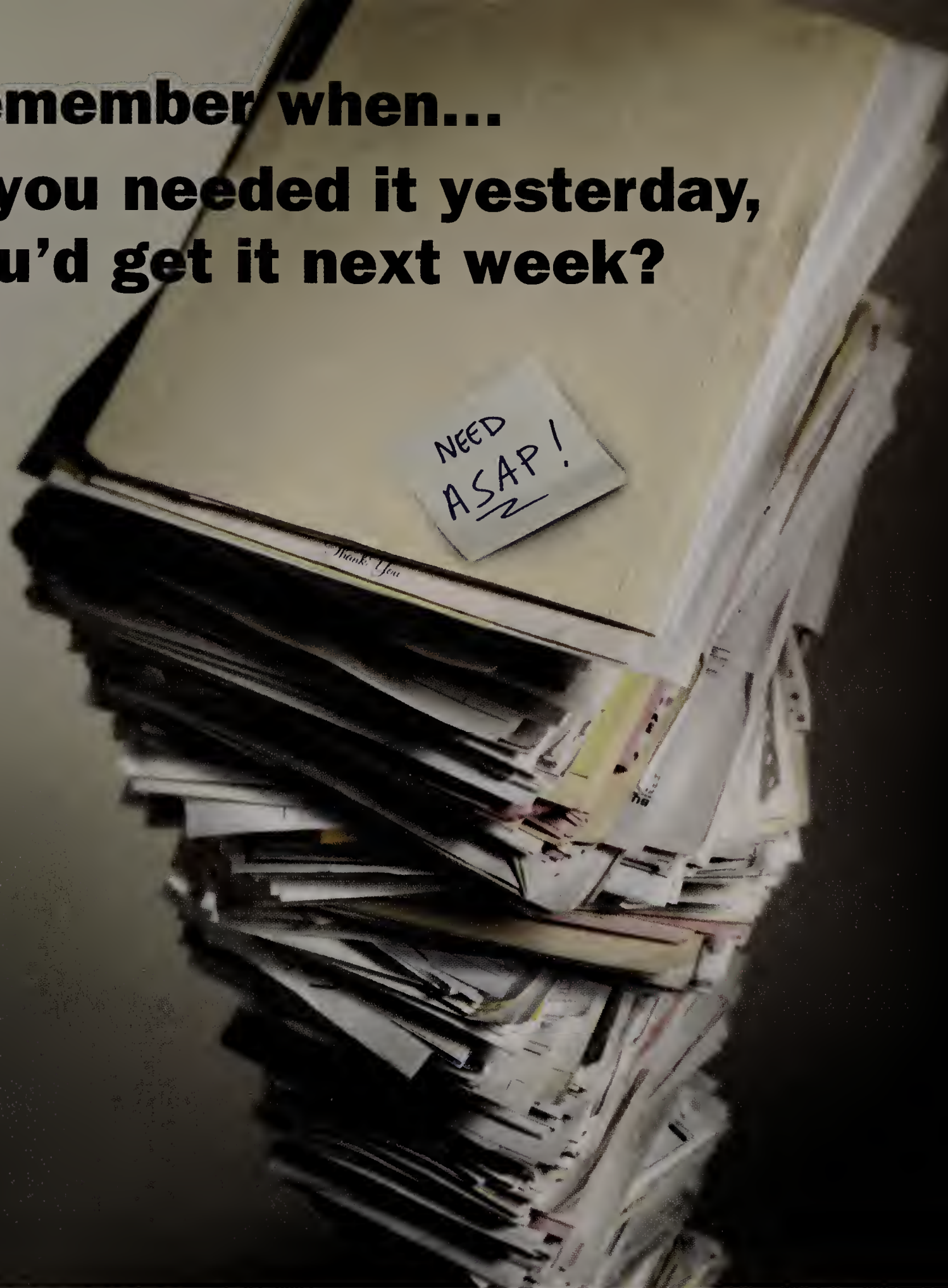
Networking newcomer **Alacritech** (founded by Larry Boucher of Adaptec) claims it can offer gigabit-class performance from your servers without overhauling your network infrastructure. The company's **Server Adapters** combine two- or four-port 10/100Mbps adapter cards with an onboard processor that can significantly reduce the load on the server's CPU, speeding response times and increasing overall throughput. According to Alacritech, other adapters can absorb as much as 100 percent of a CPU's processing power to handle network requests. The Alacritech Server Adapter, however, can reduce that load to 23 percent or less, the company claims. The two-port adapter costs \$299. For more information, visit www.alacritech.com or call 408 287-9997.

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If your support organization is swamped with requests and can't seem to dig itself out, **Wishbone Systems** may be able to help. **Wishbone WorkManager 4.0** lets support departments manage requests through a graphical interface that provides instant feedback on the current status of tasks and resources. Managers can quickly assign tasks to personnel either manually or by using automated

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of strategic marketing at computer telephony vendor Dialogic, points out that a computer has to do more than recognize phonemes; it has to understand the semantics as well. It has to know what the decoded words mean. To aid that task, people must vocalize clear, simple, unambiguous and invariant requests and responses. Strathmeyer observes that

humans may resist such discipline, suggesting that the technology might run into the same social hurdles as touchpads—even if the technology is ready to deliver.

Now you have to manage the phones. What's next, the watercoolers? Send your complaints and comments to Christopher Lindquist at et@cio.com.

PREDICTIONS

business process integration

Get Fast or Get Lost

GET READY for real-time. By 2004, more than 70 percent of the e-business applications your customers see will need to offer near-instantaneous integration with your back-end systems, or they won't be doing their jobs, according to Stamford, Conn.-based Gartner Group.

The reason is simple—slow response will equal bad customer service, says Roy Schulte, vice president of Gartner's application integration and middleware practice. As customer expectations increase, their willingness to wait for feedback after placing an order, asking a question or making any other request will diminish. Users will

also become frustrated if they find they can get faster service over the phone than they can with a browser—putting added pressure on your call center that the Web was supposed to help alleviate.

As a result, the days of being able to accept an order online, only to have it faxed to a distributor or rekeyed into a back-end order tracking system will quickly pass, Schulte says. And, he adds, companies that want to update their systems to provide faster response need to look beyond hard-dollar-cost justifications. Although it's true that moving to an automated system may let companies eliminate some clerical help, the real money will come as a result of the impact the faster system will have on the business.

For instance, Schulte notes, if a company can reduce its order-processing error rate from 7 percent to 4 percent by updating systems, that alone could save millions of dollars a year.

Speedier response can also mean more repeat business as well as the chance to recognize revenue more quickly: The faster your orders go out the door, the sooner you can charge customer credit cards. And that means more money on your bottom line.

—Christopher Lindquist

new products

scheduling. Support staff can also request tasks and have them assigned automatically according to their availability and expertise. Managers can view customized reports that provide feedback on the support operation. Pricing is \$10,000 for an 11-person work group. For more information, visit www.wishbonesystems.com or call 201 541-7000.

Procurement Possibilities

The business-to-business e-commerce arena is rapidly reaching standing-room-only capacity, though there always seems to be space for one more contender.

Vsource.net says it will take on the big players—such as Ariba and Commerce One—by offering a simpler, more cost-effective procurement solution that can scale anything from small businesses all the way to global enterprises. The company's system—called the **Virtual Source Network**—is browser-based and reportedly integrates with common back-end software, including that from Oracle and SAP. The service is free for suppliers and starts at \$25,000 for customers to establish a pilot program (with guidance from Vsource). For more information, visit www.vsource.net or call 805 677-6720.





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Greater EXPECTATIONS

THE CIO AND CORPORATE STRATEGY

IT is exerting an indelible influence on corporate strategy. Pushed and pulled by new channels, CIOs must deliver the essential component of their enterprises' marketplace position. To accomplish this expanded role, CIOs must transcend the platitudes of leadership and apply practical, actionable ideas to incorporate their vision and affect real change.

Jeffrey Garten, Dean and William S. Beinecke professor in the practice of international trade and finance at the Yale School of Management, brings together the best strategies, great corporate cultures and progressive corporate leaders that define successful global companies. Attendees will receive a complimentary copy of his work, *World View: Global Strategies for the New Economy*. Based upon his global survey and interviews with nearly 100 CIOs, Michael Earl, acclaimed business author and professor of information management at London

By straddling the role of IT and business visionary, in-house architect and corporate pioneer, CIOs are shaping their organization's future by being broad-based, multifarious enterprise leaders envisioning, promoting, and driving IT and business strategy.

Business School, plots the substantial role changes for CIOs in recent years. Earl shares data and examples gathered in the summer of 2000 from US and European organizations. Richard Barrett, author of *Liberating the Corporate Soul: Building a Visionary*

Organization, reveals how CIOs can raise their organization's "cultural capital" to improve profitability, attract and retain the best people, and release new levels of employee creativity and productivity. James C. Wetherbe joins us once again as the conference moderator and experience leader, and explores the phenomena of organizational expectation gaps and the proactive approaches CIOs should

use to manage them.

As senior vice president and CIO of Airgas, Inc., the largest distributor of industrial, medical, and specialty gases and related equipment in the U.S., Sandy Goldstein offers strategies for CIOs to anticipate the demands of an increasingly sophisticated

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and complex workplace and on- and off-line
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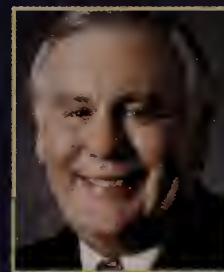


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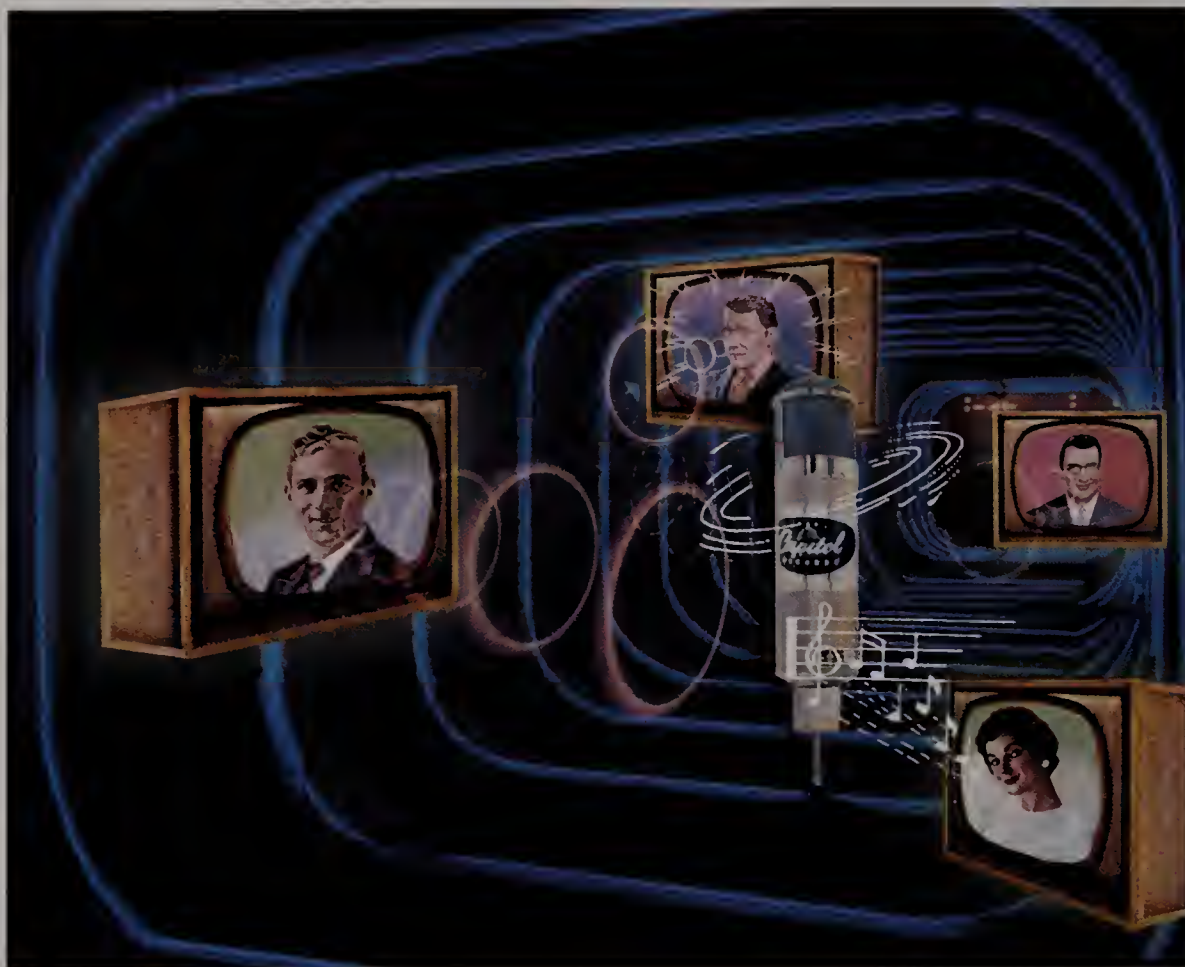
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UNDER DEVELOPMENT
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Teleconferencing Goes Stereo

OVER THE YEARS, the telecommunications industry has explored many technological frontiers, but the introduction of stereo sound hasn't been one of them—until now.

Bell Labs researchers recently made a breakthrough in audio technology that makes it possible for the first time to deliver full-duplex stereo sound over an audio or video teleconference. The technology works in an Internet protocol (IP) environment and can integrate into almost any IP-based teleconferencing system.

Stereo teleconferencing gives participants a better way to hear and comprehend multiple streams of conversation, says Gary Elko, research supervisor in the Murray Hill, N.J.-based speech research department of Lucent Technologies, Bell Labs' parent company. "It supplies the 'cocktail party effect'—the ability to listen in on a particular conversation when there are a bunch of conversations going on around you." He adds that stereo technology is well suited for use in an IP environment. "With IP's

audio delay people tend to talk all at once. Stereo will help users sort out the different voices."

To make the technology work, Bell Labs researchers had to tackle a complex problem called "stereo acoustic echo cancellation." Without echo cancellation, conference participants would suffer the screeching feedback that occurs when a microphone picks up sound from a nearby audio speaker, forming an acoustic loop.

Current echo-killing schemes rely on a one-channel-cancellation technique, which identifies a single acoustic path between the speaker and the microphone. This approach doesn't work in a stereo environment because the sound travels along multiple acoustic paths between the speaker and the microphone. To overcome this obstacle, the researchers developed new algorithms that modify the stereo signals in a way that allows for correct audio-path identification without harming the stereo sound.

Stereo conferencing technology has significant potential, says Francie Mendelsohn, president of Summit Research Associates, a Rockville, Md.-based kiosk and telecommunications research company. "It could be kind of cool," she says. "It's not something people have been asking for, but if it lives up to Lucent's promises, it could turn out to be very popular."

Bell Labs will add the stereo teleconferencing technology to a number of Lucent teleconferencing products, including Lucent Collaborative Video, an IP-based system for PC users. Lucent also plans to license the technology to other companies.

—John Edwards

"It supplies the 'cocktail party effect'—the ability to listen in on a particular conversation when there are a bunch of conversations going on around you."

—Gary Elko, speech research supervisor, Lucent Technologies



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Opinion

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CIO Confidential

Only the Names Have Been Changed

The Art of Computer Science

BY ANONYMOUS

I GOT STUCK in the Phoenix airport today, along with thousands of other America West passengers, because the computer that the airline uses to file its flight plans crashed (oops, sorry—failed). For most of the afternoon and evening, every fueled up, air-worthy airplane in Phoenix (and others cities, I presume) sat on the ground and went nowhere while otherwise polite-looking people in business suits recreated the village mob scene from *Frankenstein*, and gate agents tried in vain to make themselves small behind their counters. Through all of this, the only thing I could think was “that poor CIO.”

I picture some helpless, hopeless schmoe, technical skills atrophied beyond reclamation by years of forced administrivia,

peeking over the shoulders of his DBAs as they desperately pound their keyboards. He paces a little and wrings his hands at the thought of all his hard work—to earn a reputation for delivering innovative solutions and improving user confidence—being pierced by a hail of broken database pointers. Finger pointing, mea culpa presentation slides, action item lists and a lot of other useless thrashing will, no doubt, follow. I imagine his next performance evaluation will read something

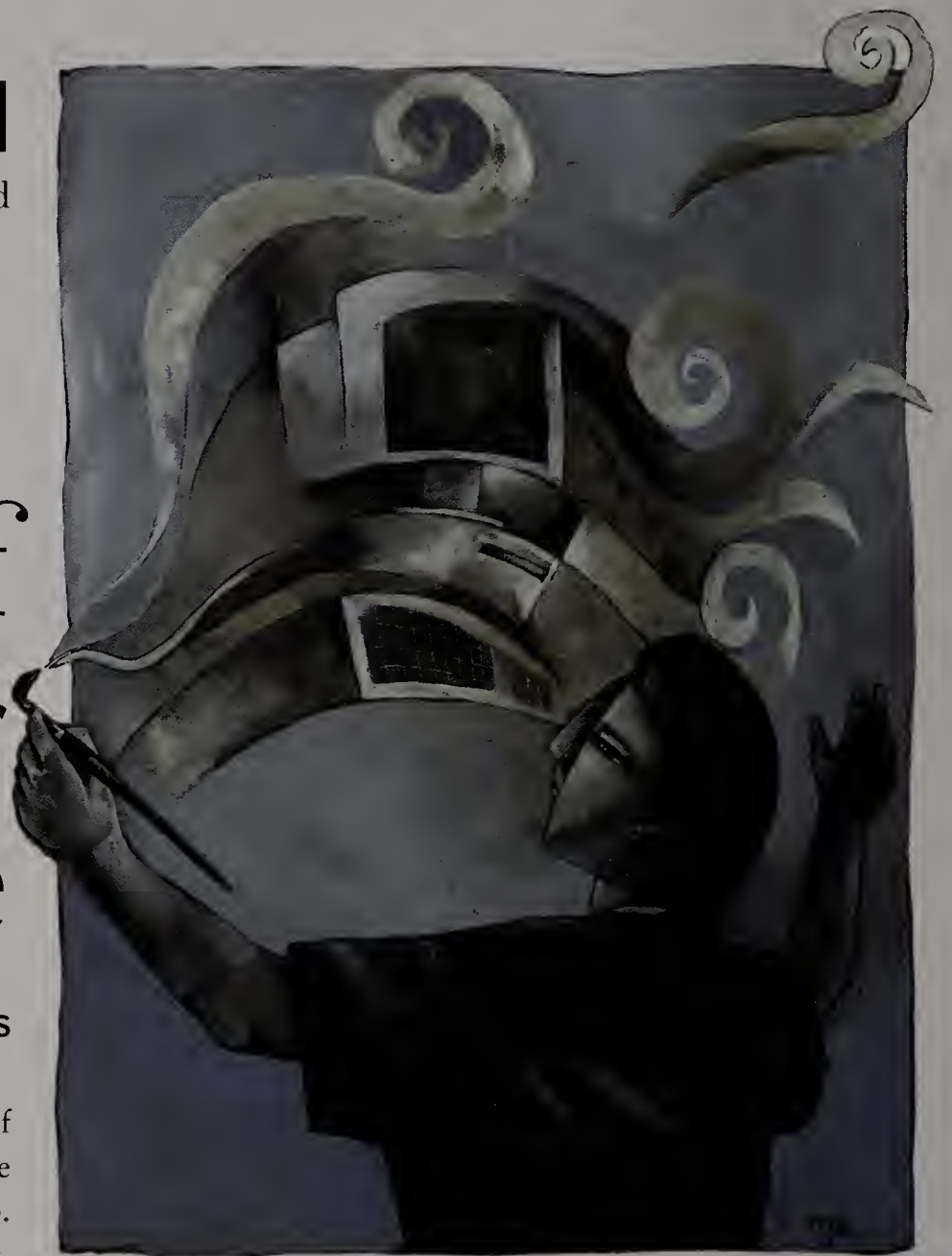


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like: established compelling strategic systems vision; improved decision-making skills and responsiveness; successfully achieved impossible budget and timeline targets; single-handedly alienated 100,000 customers.

In sympathy and solidarity, I decide not to join in with my fellow would-be passengers, opting instead to do that which my brother CIO could only dream of doing at a time like this: removing myself to the Admiral's Club and drinking, heavily.

Eat right, exercise daily, live clean, die anyway.

As I've pointed out in past columns, IS's attempts to please users have always been a sort of isometric exercise: lots of strain that gets you nowhere. Three out of every five CIOs reading this article will be out of their current jobs sometime within the next three years. In many cases that's because those who judge IS's performance, those whose opinions we in IS value most for the influence they have on our careers, our income and, dare I say it, our self-esteem, are too ignorant and too arrogant to be charged with such a critical responsibility.

Easy now...down big fella. Let me explain.

We're all irrationally arrogant about most of the miraculous technologies we come into contact with on a daily basis.

IT is performance art, a blending of the softer sciences of marketing, psychology, ergonomics, graphical design and architecture with the harder stuff of bandwidth, clock speeds and seek times.

Take, for example, the telephone. Commercial telephone service has been around for nearly 125 years, and while I'm entirely familiar with how to operate it, I have only a rudimentary idea of how it works (and that idea is probably wrong). In 99,999 of 100,000 times I pick up the receiver to make a call, I get a dial tone. I never think to myself, "Gee, those guys down at the phone company are doing a wonderful job." On the other hand, what I think that .001 percent of the time I don't get a dial tone is completely unprintable.

Most IS organizations expend between 80 percent and 85 percent of their manpower and budgets on "dial tone," the daily support and processing that keeps the business in business. When was the last time one of your users called to register their astonishment and delight about how well their e-mail was working? Punch line: Your performance on 85 percent of what you do this year, what you spend most of your budget on, will be almost entirely overlooked unless it's bad (and that ain't good).

Back at the office, it's performance evaluation time again. Known around here as "the crippler of young managers," it's an annual festival in which dignity and humanity go into palpable decline. In matters as subjective as measuring IT performance, accuracy is not always truth, and performance metrics that ignore outside factors are nearly worthless in assessing quality. What's more, user satisfaction is amazingly blind to degree of difficulty, architectures and strategy. Writing appraisals is difficult to the point of impossible, even for people who understand what constitutes successful performance. So why is that?

An author friend of mine once told me that the reason novelists and most other artists seem insecure all the time is because success in artistic pursuits is so hard to define. Well, guess what? In spite of the lab coats of earlier days, mysterious acronyms and legions of propeller-heads with bad attitudes and even worse social skills, IT is not a science, it's an art. The inarguable fact that there are as many different ways to design and code a program as there are programmers, that there are a million right ways to write an application and one best way yet to be defined, means that it will always be an art, an exercise in making something out of nothing.

In fact, it's not just an art, it's performance art, a blending of the softer sciences of marketing, psychology, ergonomics, graphical design and architecture with the harder stuff of bandwidth, clock speeds and seek times all wrapped up in a 30-minute presentation sent begging for budget.

This notion of IT as art form may be one of the least understood yet most vitally important concepts we can share with the bean counters as we go about the ever more challenging job of delivering innovative and competitive solutions, recruiting and retaining creative, productive teams, and fighting to stay in our jobs long enough to have a meaningful impact.

Over the years, we've tried dozens of the several hundred half-baked schemes that have appeared in this and other magazines, journals and textbooks about measuring IT performance when instead I should have been putting them through the shredder and using them to line the bottom of my kid's hamster cage. That the creative process could be measured, studied and somehow enhanced by converting it to numbers is so silly, I'm embarrassed to admit we even tried.

Now it would be wrong (not to mention pointless) to argue that we should be given a pass on evaluations. But it's time to come to grips with the fact that if we always knew what we were doing, always knew how long it would take and what it

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would cost, it wouldn't be IT, it would be...accounting! The way you get meaningful things done in IT is to embark on a process in which you move in a given direction, find yourself at a dead end, back out shaking your head with frustration or disgust, puzzle out why that particular path was wrong and start off again. With every wrong turn, you figure out more,

As things get more demanding, that impatience is turning inexorably to contempt.

so that every process is an education. The benefit of false starts and ideas that don't pay off is that going through the process of discovery often alerts us to unexpected new directions.

As they say, "Victory goes to the player who makes the next-to-last mistake."

The need for risk taking has never been greater as we struggle to compete on a truly global basis. Yet in most businesses, there's never been much patience for mistakes. As things get more demanding, that impatience is turning inexorably to contempt.

Always willing to try anything, no matter how desperate, we've recently kicked off a comprehensive program of educating my boss, assorted members of senior management (with the exception of our head of HR, whom we've locked in a closet with our scariest XML programmer) and some of my peers in the fine points of assessing our group's challenges and opportunities. We started by making a list of all our hot spots (user acceptance tests, new application implementations, month-end batch runs, the help desk during a Windows 2000 rollout), then doing everything we could to shanghai them into experiencing these efforts firsthand. If

things go well, we will begin to change the way IT performance and value are measured. It will also communicate to those doing the work that management cares enough about what they're doing to take the time to understand how it's done.

Wish us luck. **CIO**

Anonymous has been a CIO at household-name companies in various industries for over 12 years. He welcomes mail from artists of all types at confidential@cio.com.

Coming in CIO

Look for These Articles in Future Issues

The 50 Best and the 50 Brightest

Hundreds entered our contest, but only a few could win. We've reviewed, tested and tried each entry in our annual Web Business 50/50 to give you the Internet and intranet sites that have truly mastered presentation, usability and customer service. Be sure to see this year's issue to learn from those companies that have come out on top.

Marketing Your IT Department

In the new world of e-business, serving and delighting your external customers is the name of the game. But internal customers deserve a little tender, loving care too. Smart CIOs are instituting

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Product lifecycles are shorter than ever. The only way to compete is to continually push out newer, faster and better products than your competition. Collaborating with parts suppliers and other companies in the engineering stage can save loads of time. That collaboration requires securely sharing design documents, three-dimensional models and parts specifications. This article will look at the state of the technology tools that make it possible and the obstacles (from the technical to the political) that make it difficult.

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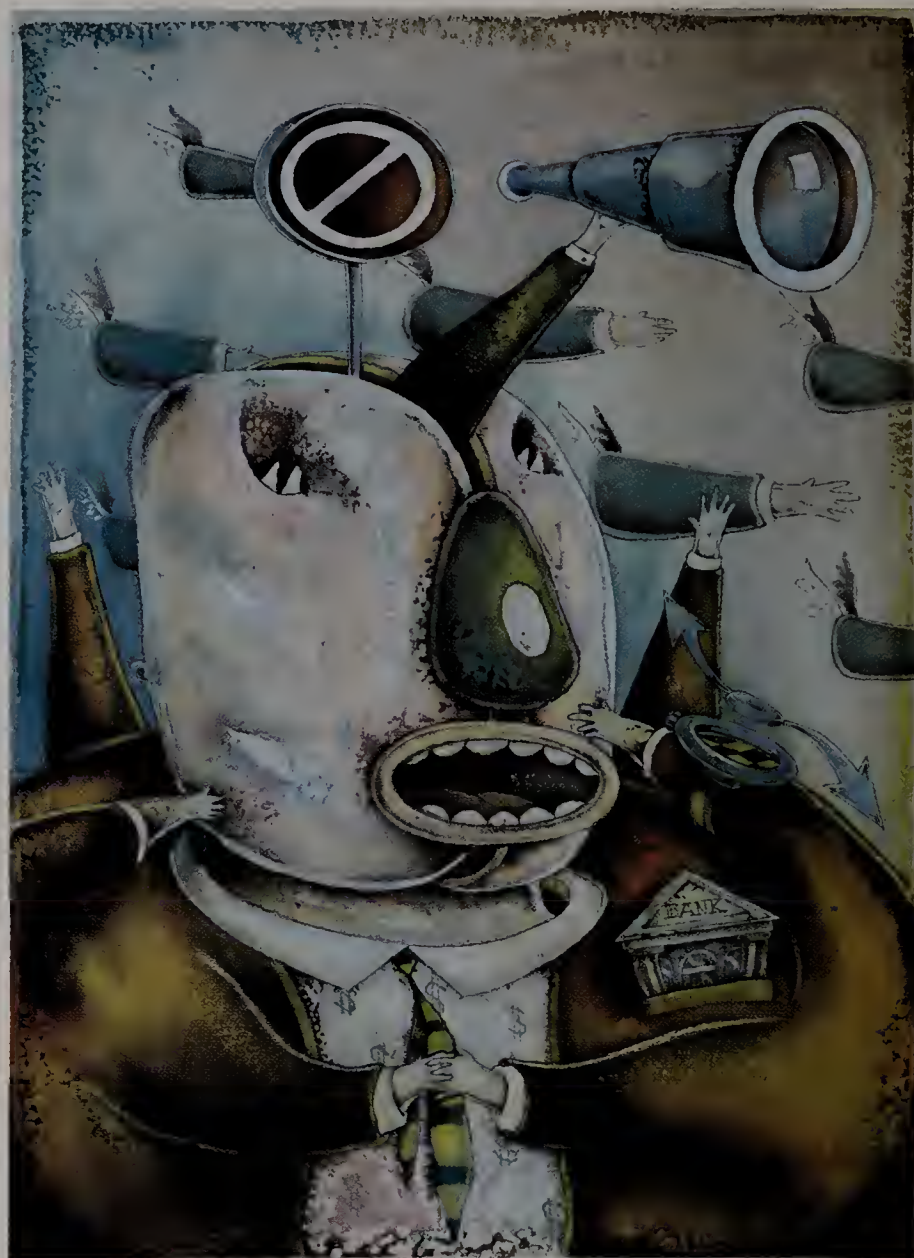
Why Banks Are E-Commerce Challenged

MARILYN R. SEYMANN

I'M NOT A CIO. I can't fix your PC, make your systems secure or write a program. But as the CEO of a bank consulting company who spends half her time engaged in techie talk with boards of directors and CEOs and the other half on boards approving—albeit skeptically—technology plans and budgets, I can offer perspective and insight that comes from years of experience.

E-commerce and the Internet are no longer the vague, mysterious entities they once were, and most bank CEOs and directors have finally come around to admitting that there is no longer a question of whether banks can move forward with e-commerce initiatives while managing short-term earnings pressures, ongoing acquisitions and limited resources.

By virtue of serving on the boards of the most regulated industry in America, bank directors traditionally evaluate risk based on the degree to which errors can be avoided and mistakes eliminated. Risk is managed with rigid operating procedures that allow minimal expectations, require thorough documentation and provide a careful review of errors. A technology investment that doesn't pan out is handled like a bad loan—correct it, and avoid it in the future.



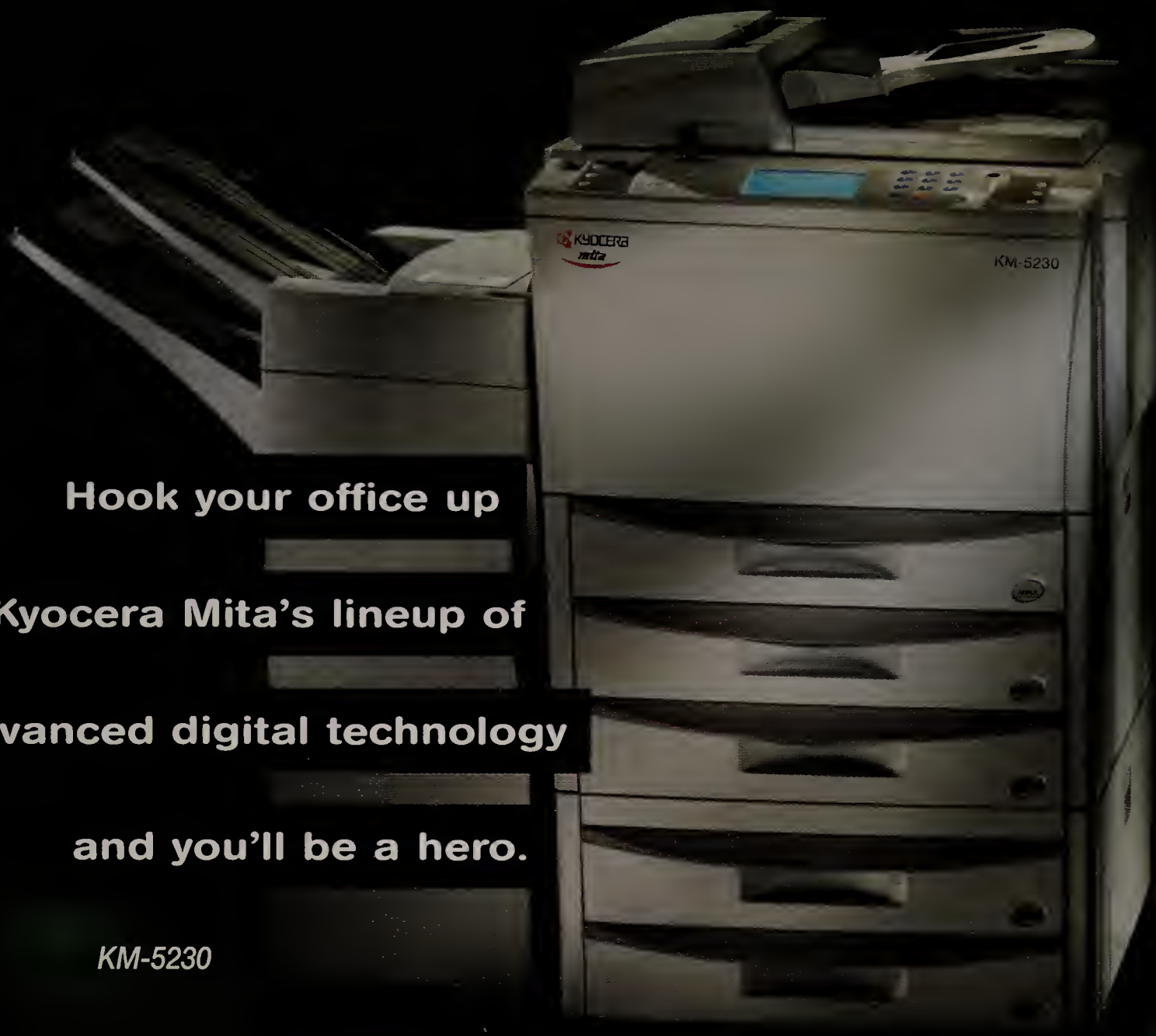
How to balance risk with the Internet and e-commerce? Nonbanks vying for a piece of the financial services business operate under a completely different set of risk rules from banks. Regulation is lax on the Internet, and even bank regulators have taken a hands-off approach to e-commerce. Mistakes are not only tolerated, they are celebrated. (How many millionaires have resulted from public offerings of new companies that have never made money?)

Caution to the Wind

Risk is no longer about avoiding mistakes. Caution is no longer the name of the game. Missed opportunities and lost revenue streams result from an inability to enter a market fast enough.

Speed and risk have become the very foundation of all economic activity, yet bank CEOs are approaching the "e" world with deliberate caution, allowing their traditional risk aver-

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sion to paralyze progress. Impossible as it is to predict the shape of things to come, one thing is certain: Banks can no longer allow their overly cautious risk profiles to further distance them from industries that are vertically disintermediating them. Paradoxically, in an attempt to take only "safe" risks, banks are taking a huge risk, namely, losing out to forward-thinking competitors. Banks must learn from the dotcom world that zero risk and speed are incompatible.

One of the biggest challenges facing a bank CIO in the e-commerce world is convincing the board to change its traditional view of technology risk. Because the best decisions flow from knowledge, CIOs need to help their CEOs and directors readjust their thinking. There are many ways to do this, includ-

ing creating IT white papers, establishing an R&D line item in technology budgets and encouraging directors to look outside the industry for examples of speed, customer focus and value creation; begin promoting the idea that e-commerce initiatives might require new departments or lines of business on the organizational chart, and perhaps even physical separation; provide specific examples of how this works. But above all, be patient. If your message doesn't get through the first time, repeat it. Today CIOs must help boards understand that the greatest risk posed by e-commerce is doing nothing at all. **CIO**

Marilyn R. Seymann is president and CEO of M One, a Phoenix-based consulting company specializing in bank management and technology planning.

Microsoft's Strength

BY WILLIAM F. ZACHMANN

THERE WERE PLENTY of pundits dumping on Windows 2000 in the run-up to Microsoft's formal launch this past February. At least one prominent IT-guru company did a major league "Chicken Little" act, warning clients to go slow on Windows 2000, implying that the sky would fall on early adopters. A Valentine's Day piece in *The New York Times* three days before the introduction of Windows 2000 was headlined, "Microsoft Faces Skeptical Market with Windows 2000." The company's share price slumped a week before the launch under the weight of all the bashing.

Microsoft bashing has lately been such a popular fad among the press and industry gurus that it may be a few more months before the truth will win out. It is only a matter of time, however, before all but the most hard-core die-hard anti-Microsoft fanatics will be able to see, plain as the egg on their faces, that the professional pontificators who predicted a perilous, slow and rocky road for Windows 2000 acceptance were all wet. Not only will the move to Windows 2000 be remarkably swift, by any reasonable standard, but the impact of Windows 2000 on enterprise computing will be profound, far reaching and long lasting as well.

We are not in Kansas anymore, Toto! Corporate computing

is about to undergo one of those major tectonic shifts that rearrange continents. The skeptics will be proved wrong as Microsoft's latest effort to provide industrial-strength platforms advances even deeper into the heart of corporate IT practice, to the growing discomfort of Microsoft's competitors. Windows 2000's gains will, necessarily, be losses for the more established high-end IT platform vendors, such as IBM, Oracle and Sun.

The move beyond the standalone PCs began in the second half of the '80s, initially with truly local networks, which for the most part simply support file and print sharing. By the early '90s, as the technology matured and more capable and reliable servers appeared, client/server architectures became viable foundations for increasingly mission-critical applications. Client/server applications on Intel platforms were initially used on more powerful, semiproprietary Unix-based platforms from more traditional vendors. They have become a plausible option with OS/2 and Windows NT servers in the first half of the '90s.

The Power of Old Architecture

The use of Intel-architecture client/server options throughout the first half of the '90s was limited because both OS/2 and NT were still under development and lacked capabilities needed to fully support industrial-strength applications. The competitive edge for more complex high-reliability applications remained with Unix-related workstations and servers from vendors, including HP, IBM and Sun. Wintel alternatives, though they gained ground in the first half of the '90s, did little more than nibble away at the more traditional alternatives' territory.

By the mid-'90s, the explosion of the Internet generally found the older architectures more suitable for large-scale Web applications than the newer Intel-centric alternatives. The big



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websites that developed during the last half of the '90s were mostly built on traditional Unix server platforms. A Windows NT Server on Intel platforms, while increasingly popular for small- and midscale website hosting, remained an option of a minority through most of the decade.

With the introduction of Windows NT 4.0, though, things began to change during the second half of the '90s. Plagued by some early problems, NT4 initially got off to a relatively slow start. Those who recently have predicted an equally slow start for Windows 2000 have done so with the assumption that the NT4

Microsoft has taken its time with Windows 2000, doing far more thorough testing than it did with any prior version of Windows.

experience will be repeated with Windows 2000. They have, however, failed to observe some important facts.

First, Microsoft clearly learned from its experience with NT4 that getting a new operating system right is more important than getting it out quickly. NT4, like NT 3.1 before it, was rushed to market to meet competitive challenges primarily from IBM's OS/2. In retrospect, Microsoft's decision to move more quickly to market with less thorough prerelease testing, while it may have slowed initial acceptance of NT, clearly accomplished its competitive objective regarding OS/2. Microsoft has, however, taken its time with Windows 2000, doing far more thorough testing than it did with any prior version of Windows.

Second, though linked to a 16-bit Windows legacy, NT was an almost entirely new operating system, all of whose parts needed to be checked out from scratch. Prior versions of 16-bit Windows were not a foundation on which to build NT, but rather a compatibility problem to be dealt with. Windows 2000, however, is an enhanced, upgraded version of NT, built on an already quite stable NT foundation. Remember, Windows 2000 was originally named Windows NT 5.0 and therefore has a solid base that was not available in the earlier versions of NT.

Third, amid their negative consensus prior to the Windows 2000 launch, the press and pundits failed to note that Windows NT 4, after a slow start, took off like a rocket in the final two years of the '90s. Windows NT deployment, after laying down a long, flat growth curve for most of the decade, surged dramatically in 1998 with strong continued acceleration throughout 1999.

Rapid Development

Roughly from the time of Service Pack 4, which finally brought NT the function and stability it ought to have had in the first place, NT deployments really picked up their pace. By the end of 1999, Windows NT was on a tear in terms of corporate acceptance, going into 2000 with enormous momentum. That momentum will only accelerate further with the transition to Windows 2000.

The skeptics' assumption that the course of Windows 2000 adoption would repeat that of NT 3 and NT 4 is as wrong as their assumption that Windows 2000 will suffer from the same problems of stability and performance on a scale similar to those initially encountered with NT. Useful though it may be to learn from history, one must not assume simple repetition of the same scenario when critical factors are different.

Windows 2000 deployment will be much more rapid than that of Windows NT, in part for the reasons above. It will also, however, be more rapid because it expands substantially the scope for use of low-cost Wintel servers in the enterprise. Windows 2000's incremental capabilities put all but the very biggest applications within reach of increasingly powerful Intel server platforms at costs well below that of proprietary IBM mainframe-minicomputers or semiproprietary Unix servers from vendors like Sun. Much as these established vendors would like to convince us otherwise, the truth is that user organizations have a fast growing array of lower cost but viable Intel-architecture alternatives. Windows 2000 accelerates the growth of those alternatives.

Windows 2000 on Intel-architecture servers may not be the best choice for every possible use, but it will surely be a viable option for more uses than any of its predecessors. It will extend the reach of Wintel platforms even further into the mission critical space of industrial-strength applications for the enterprise. It will put more competitive pressure on traditional competitors and force them to lower prices simply to stay in the game. It will further reduce the territory of the older proprietary and semiproprietary platforms unique to individual system vendors. And it will, of course, benefit user organizations by bringing them more options at lower costs. **CIO**

Do you have an opinion you would like to express? Let Senior Editor Megan Santosus know at santosus@cio.com.

William F. Zachmann is vice president of Meta Group, an IT research company based in Stamford, Conn.



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How Are You Improving IS-User Relations?

BY MARTHA HELLER

A FEW MONTHS AGO, I wrote a column called “Why does everyone hate the IS department?” and received more than 200 impassioned postings from embattled IS professionals. Some respondents argued that tight budgets, managerial deficiencies and personality conflicts run so deep that antagonism between IS departments and their users is here to stay. “IS management expects users to pay for training, and user management expects IS to pay,” wrote one reader. “Cost-cutting demands that have been placed on management in every department create a standoff that never gets resolved.”

“Political pressure within the organization causes IS people to go off in a hundred different directions at the same time,” wrote another. “The result is that no one—neither the IS people, nor their users—is ever happy. This will never change.”

But many readers were far less pessimistic. They not only believe that IS departments can work harmoniously with their users, they are creating that harmony within their own organizations.

Jim Reddish, director of IS at the Community Educators Credit Union in Rockledge, Fla., has been “building on a team



attitude. Just like in team sports, you need everyone to work together,” he writes. “We try to make sure someone from IS is in on other departmental meetings. It’s important for the users to hear what technology can do for them.”

Michel Fournié, director of IT at Cartons St. Laurent in Montreal, has found that “by establishing a clear service-level agreement, putting a strong emphasis on the quality of support and following up with a yearly customer satisfaction survey, it is possible to have a good working relationship with the user community.”

“A few years ago, I came into a building filled with animosity toward IS,” writes Joe Gagliardi, CIO of Unisa, based in Miami. “An overworked MIS department was in constant emergency mode, always working for whoever was screaming the loudest. After getting the backing of the board and top management, I put into place a separate department just to deal

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with the fires, and a small team to work on fixing the infrastructure of the systems. It only took a few months for the corporate culture to change. Today there is a positive spirit and a strong sense of teamwork.”

To these IS managers and CIOs, change is possible, and they are making it happen. What about you? Are you throwing up your hands in despair over eternal interdepartmental battles or are you working hard to eliminate them? What are you doing to improve relations with your users? This thread began March 15, 2000. Here is a sampling of the responses that I received. You can respond to me at mbheller@cio.com or via the Web at comment.cio.com.

HOW ARE YOUR I.S.-USER RELATIONS?

Want to sound off on this or other topics? Join the ongoing debates at comment.cio.com.

WE TOOK SEVERAL STEPS TO IMPROVE RELATIONS WITH our users. Here's our top 10 list.

1. Reorient all of our work into services.
2. Establish service-level agreements for everything we do.
3. Make sure IS understands that the employees of the company are our customers.
4. Implement an account management program for the departments who use many IT services.
5. Implement a tender loving care (TLC) program where senior IS people are paired up with company executives and department heads to periodically meet, check progress, make suggestions and gain feedback.
6. Implement a Web-based customer survey that samples one-quarter of the company each quarter (it helps if you outsource this to a professional survey company).
7. For the people in IS who are on a variable pay plan (more than 50 percent), earmark a portion of the variable pay to be dependent on the customer satisfaction rating.
8. Be very aggressive in adopting new technologies—the users love it and IS employees are excited about it.
9. Adopt a theme of running IS as a business that makes us think and act as if we need to sustain a business of our own. This helps us be responsible and cost-effective and to plan ahead.
10. Conduct quarterly service reviews for each service that allow us to review the health of each service.

Mark Endry

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IT IS ALL A MATTER OF ATTITUDE. EVERYONE WANTS TO BE heard, especially when they are under pressure and something isn't working. Let the users shout and just listen; when they calm down, smile and try to make them feel as if you are doing everything you can to resolve the problem. IS needs to learn not to take the shouting personally but at the same time keep an open ear.

Laurence Mayer

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WE ARE HERE TO SUPPORT USERS IN WHATEVER PROBLEMS they encounter. We must also maintain a customer support role and develop relationships with the users, so that the end users trust us to handle their problems. It's similar to any business—the customer is always right, the same goes for IS. We need to service users from this standpoint so that we can gain their trust. It takes hard work and good leadership and we must always keep communication open at all times between all departments.

Ken Garcia

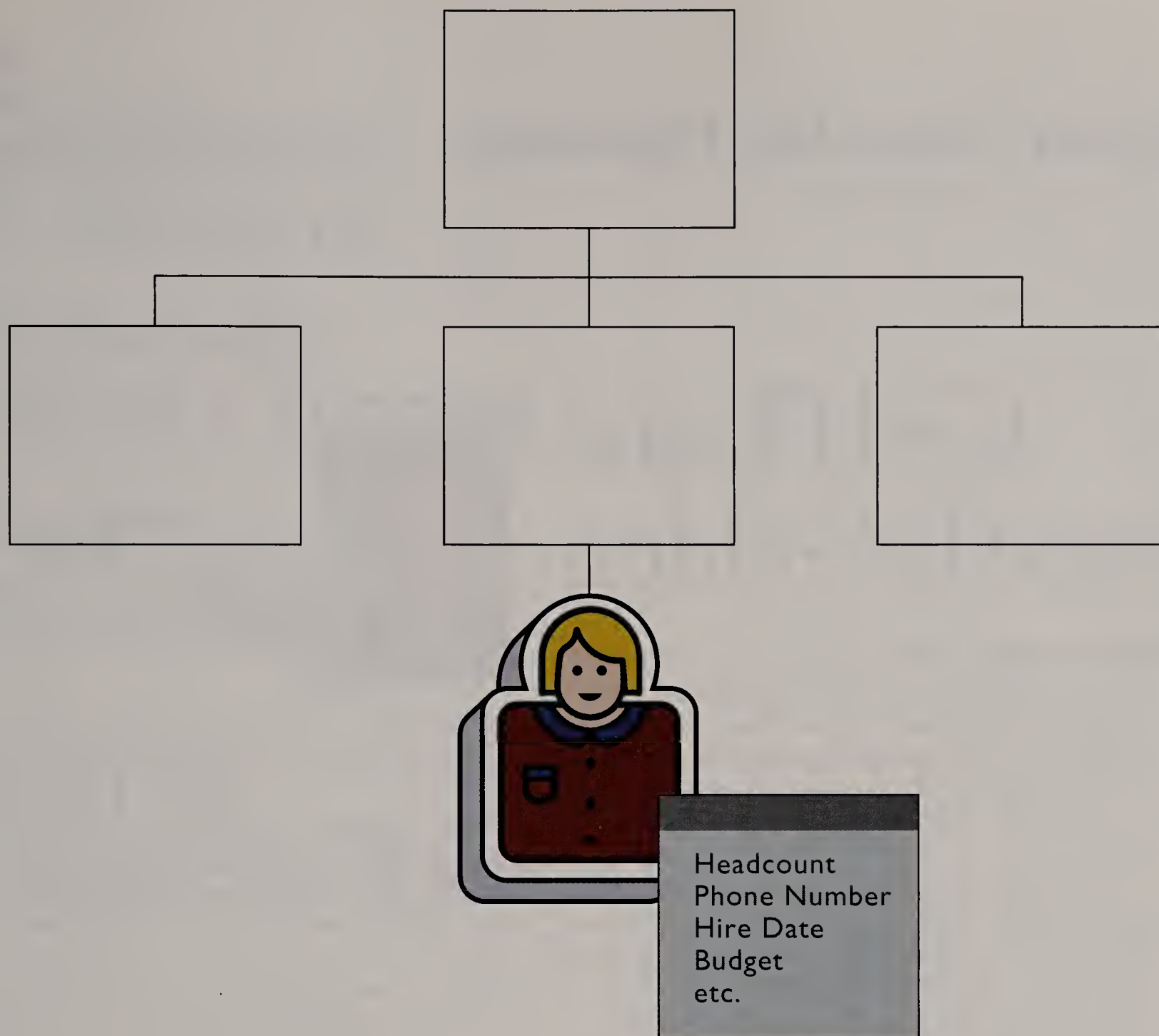
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I HAVE TO HAND IT TO JOE GAGLIARDI BECAUSE I THINK HE put his finger on the problem that causes the low marks that IT receives in many businesses. If IT is ever to improve relations with its customers (a term we prefer over users) we must focus on breaking the fire-fighting cycle. The CIO's primary role then becomes one of gaining the support to create enough “white space” for the IT staff to address the underlying causes of the crises (poorly devised or inadequately enforced standards, inadequate operating processes, poor communications and so on).

The second job for the CIO is to make sure that the organization has the necessary competencies to solve the underlying problems. If these do not exist in the organization, a retooling process must begin that will probably cause the culture change to take longer than the few months that Joe experienced at Unisa. The important step is to begin the improvement process and then communicate extensively with the customers, even when things go wrong. Rather than blame human nature, we should exploit it. People feel better when they are informed and believe that there is empathy for their pain.

Brad King

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Cell Phone Silence Is Golden

AS A FREQUENT FLYER, the favorite part of my flying experience is not an on-time departure, good in-flight service or luggage that greets me at the baggage carousel. Rather it is those melodious words uttered at push back from the gate: "At this time in our flight, all cell phones must be turned off."

Ah, that is telephonic heaven for non-cell-phone users like myself.

If asked about the presidential election five months away, I would advise the candidates to forget taking on the National Rifle Association. A better way to garner votes would be to build planks in their platforms aimed at giving the airwaves back to normal people who talk at normal decibel levels, about normal topics on normal land-wired telephones.

Waiting for a 6:30 a.m. flight from Boston to New York City recently, I was seated in the passenger lounge next to a man who was sleeping—but not for long. Directly behind us sat a young man talking loudly on a cell phone about how he made a bundle the day before in the stock market.

My sleeping colleague's fortunes in the market must not have fared as well; after one minute of listening, he abruptly stood up, grabbed the cell phone from its startled user and



Gary J. Beach

deposited it in the nearest garbage can accompanied by appreciative rounds of applause from other passengers in the area.

On the return trip, I experienced an equally bizarre cell phone incident. As I exited the jetway, I thought for a moment that I had entered a lecture hall at Harvard University. Most of the waiting passengers were studiously taking notes. Their "professor" was an oblivious cell phone user offering up financial planning advice—easily heard 50 feet away—while wielding the weapon of choice for avant-garde cell users...the concealed microphone and earphone "bud."

My unscientific observations of cell phone users convince me that they do not realize how irritating they have become walking around wrapped in their telephony cocoons. Nor are they aware of the rising tide of public resentment building against them.

If cell phone users do not want airline regulations to spread to other modes of public transportation, open spaces or restaurants, they must become more considerate of others. They can start by speaking at normal decibel levels and being aware of people around them.

Let me know what you think of the pervasiveness of cell phones at gbeach@cio.com.

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Reporter Dispatch

Just Do It Now

When you're a business writer, your stories generally don't often affect you personally. I don't run my own company, and the closest I get to managing IT is deciding when to upgrade our home PC. Little did I know that reporting this month's story on fast IT strategy (see "Be Nimble, Be Quick," Page 84) would put me in readers' shoes.

For starters, the assignment itself was on a fast track. I was asked to take on the project although I had already spent a whole month researching another piece. I had six weeks to do background research, track down sources, conduct interviews and write a draft—work that often takes twice as long. When I was done, I had a better understanding of how to stay focused in a "do it now" world.

Throughout the reporting and writing process, I tried to apply the advice I was getting from CIOs and consultants—have a good general plan, make use of well-tested approaches and consider alternative scenarios. I knew what the story had to accomplish: Give readers tips for planning at top speed without panicking. My sources came from traditional places, such as authors of books and articles I'd read, suggestions from colleagues and recommendations from people I interviewed. Without the time to line up key sources or outline the story in advance, I thought more carefully about what I would do if interviews fell through (some did) or if my ideas weren't feasible (some weren't).

The advice worked. I didn't panic (well, not much) when I had to renegotiate deadlines with my editor because of scheduling snafus, or when my favorite sidebar idea didn't pan out. I haven't stopped caring about the details (there's no story without them, after all), but it's much easier now to see that there are many paths to the same result.

—Elana Varon, senior writer

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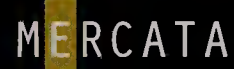
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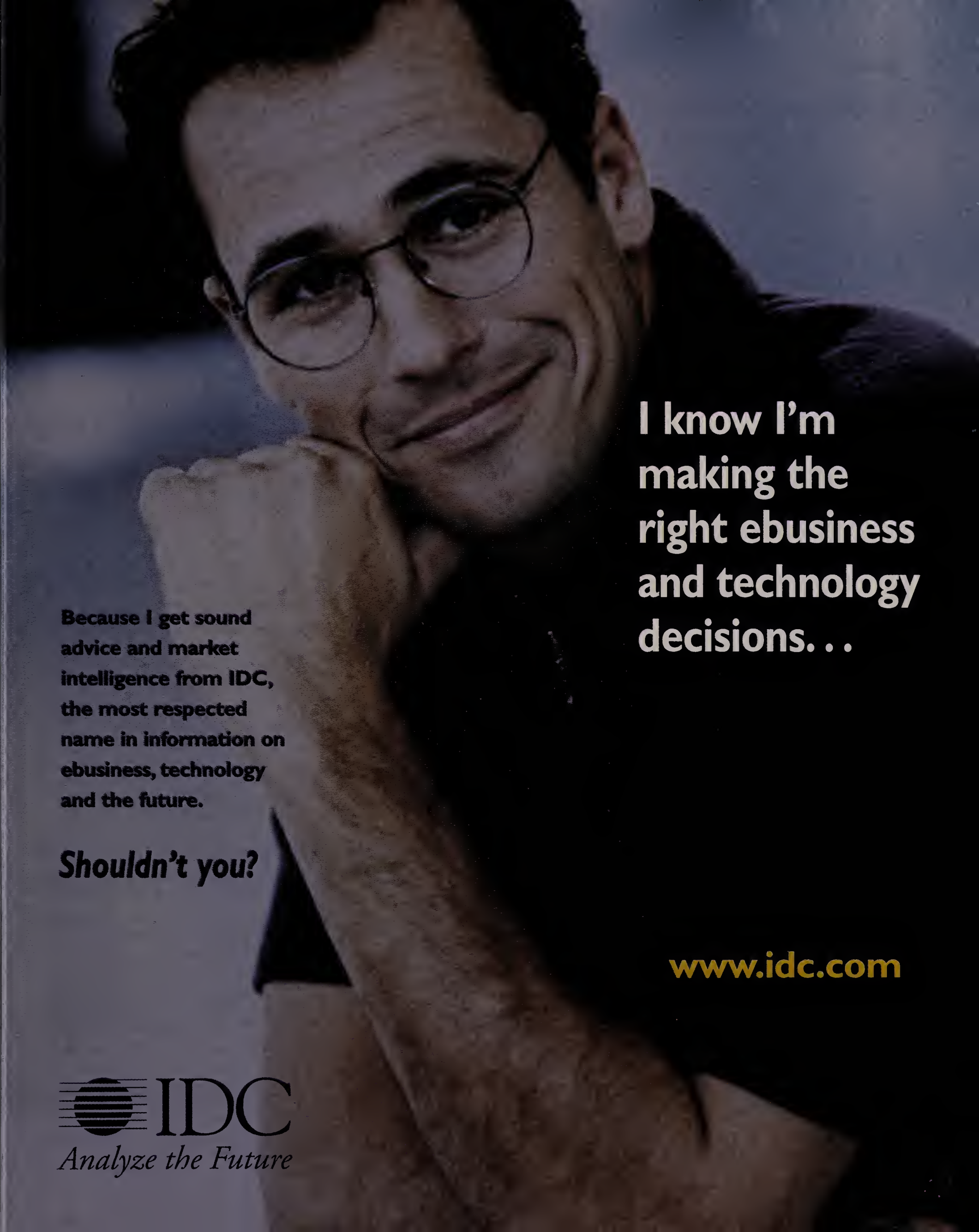
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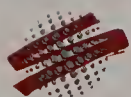
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Answering the Call

TRUE STORY: When dial telephones first replaced the crank variety in one Iowa town, the phone company set up two pay phones a block apart and taught the local farmers to use them by having them call each other.

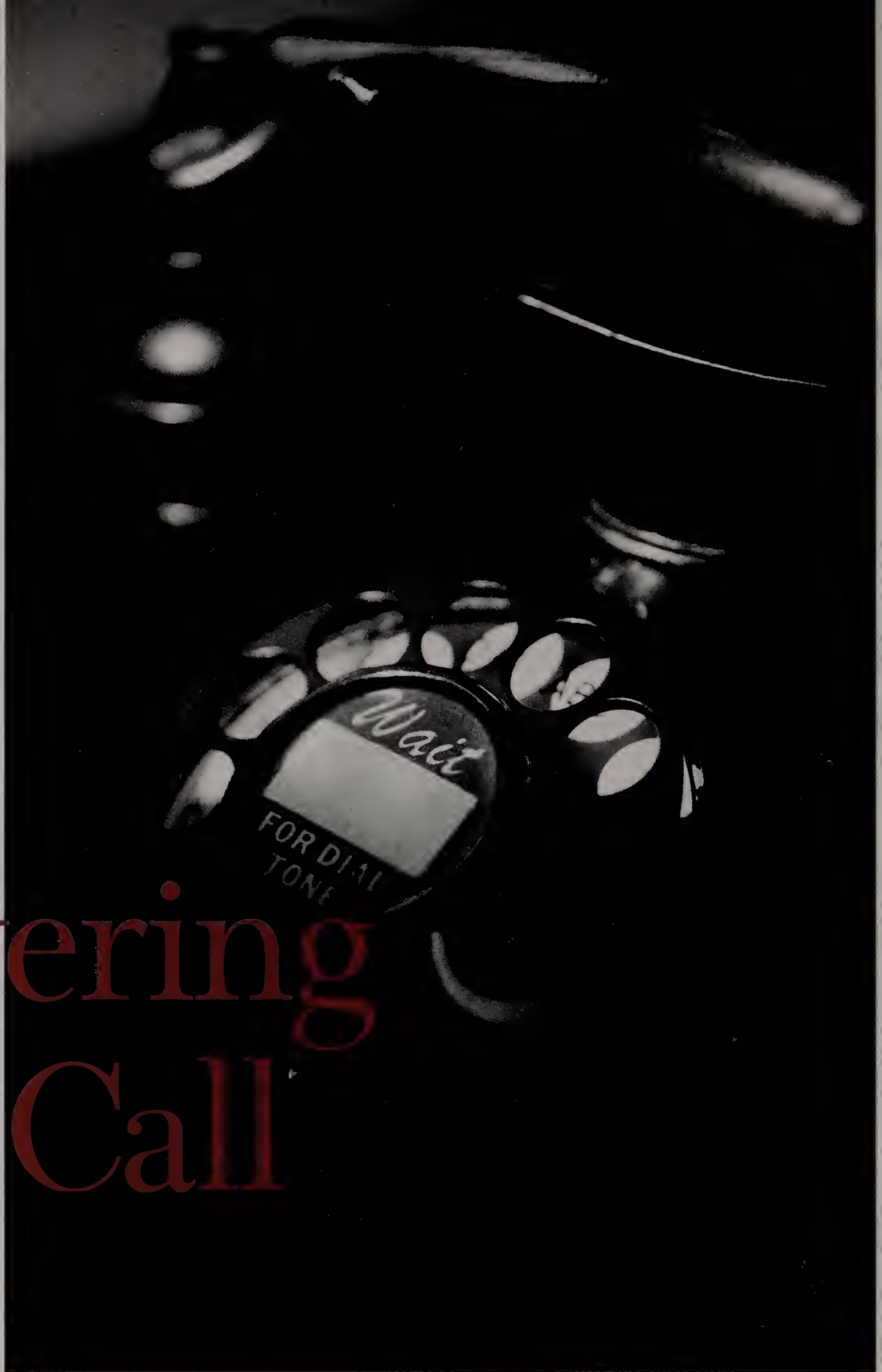
Since Alexander Graham Bell, then a 29-year-old professor of elocution working out of a Boston machine shop, patented his fledgling device in 1876, telephones have gone from being an object of ridicule to one of mystery to one of ubiquity.

The telephone and its offspring have

transformed commerce and industry, certainly, but more than that, they have transformed our social lives. With the advent of long-distance calling, faraway family members no longer seemed so far away. Party lines gave us a more intimate view of our neighbors than porch sitting ever could. The phone revolutionized adolescence, and the coveted Princess variety, released in all its pastel splendor

in 1959, paved the way for the sleek cell phones and pagers that today hang from the waistbands of drooping cargo pants.

But while industrialized nations like ours take the phone for granted, much of the world has never been interrupted during dinner by its shrill ring. Tunisia, for example, averages fewer than six telephones for every 100 people; in Angola, there is just one for every 250. **CIO**





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